PORTATONE

PSR-740/PSR-640

SERVICE MANUAL

PSR-740

PSR-640

CONTENTS

PK 001627

PSR-740 19990901-160000
PSR-640 19990901-120000

YAMAHA
HAMAMATSU, JAPAN
1.82K-9201 Printed in Japan '99.08

IMPOR TANT NOTICE

This manual has been provided for the use of authorized Yamaha Retailers and their service personnel. It has been assumed that basic service procedures inherent to the industry, and more specifically Yamaha Products, are already known and understood by the users, and have therefore not been restated.

WARNING : Failure to follow appropriate service and safety procedures when servicing this product may result in personal injury, destruction of expensive components and failure of the product to perform as specified. For these reasons, we advise all Yamaha product owners that all service required should be performed by an authorized Yamaha Retailer or the appointed service representative.

IMPORTANT : This presentation or sale of this manual to any individual or firm does not constitute authorization certification, recognition of any applicable technical capabilities, or establish a principal-agent relationship of any form.

The data provided is belived to be accurate and applicable to the unit(s) indicated on the cover. The research engineering, and service departments of Yamaha are continually striving to improve Yamaha products. Modifications are, therefore, inevitable and changes in specification are subject to change without notice or obligation to retrofit. Should any discrepancy appear to exist, please contact the distributor's Service Division.

WARNING : Static discharges can destroy expensive components. Discharge any static electricity your body may have accumulated by grounding yourself to the ground bus in the unit. (Heavy gauge black wires connect to this bus.)

IMPORTANT : Turn the unit OFF during disassembly and parts replacement. Recheck all work before you apply power to the unit.

WARNING: CHEMICAL CONTENT NOTICE!

The solder used in the production of this product contains LEAD. In addition, other electrical/electronic and/or plastic (Where applicable) components may also contain traces of chemicals found by the California Health and Welfare Agency (and possibly other entities) to cause cancer and/or birth defects or other reproductive harm.

DO NOT PLACE SOLDER, ELECTRICAL/ELECTRONIC OR PLASTIC COMPONENTS IN YOUR MOUTH FOR ANY REASON WHAT SO EVER!

Avoid prolonged, unprotected contact between solder and your skin! When soldering, do not inhale solder fumes or expose eyes to solder/flux vapor!

If you come in contact with solder or components located inside the enclosure of this product, wash your hands before handling food.

■ WARNING

Components having special characteristics are marked ⚠ and must be replaced with parts having specification equal to those originally installed.

SPECIFICATIONS

Keyboards
- 61 standard-size keys (C1 - C6) with touch response.

Display
- Large multi-function LCD display

Setup
- STANDBY/ON
- Master Volume : MIN - MAX
- Input Volume : MIC/LINE (PSR-740)

Demo
- PSR-740 : 10 Songs
- PSR-640 : 8 Songs

Language
- English, German, French, Spanish, Italian, Japanese

Realtime Controls
- Pitch Bend wheel
- Modulation wheel (PSR-740)

Control & Number Buttons
- VOICE L
- VOICE R1
- VOICE R2
- FUNCTION
- SONG
- STYLE
- TEMPO/TAP
- TRANSPOSE
- ACMP/SONG VOLUME
- VOICE CHANGE
- MIXER
- ORGAN FLUTE (PSR-740)
- GROOVE (PSR-740)
- MULTI EFFECT (PSR-740)
- VOCAL HARMONY (PSR-740)
- DIRECT ACCESS
- NEXT/BACK
- EXIT
- Data dial, [1] - [0], [+/YES], [–/NO]

Voice
PSR-740
- 267 Panel Voices +13 Drum Kits + 480 XG Voices + 1 Organ Voice
- Polyphony : 64

PSR-640
- 223 Panel Voices +12 Drum Kits + 480 XG Voices
- Polyphony : 32

- Voice Set
- R1/R2/L Voices
- Part on/off (R1/R2/L)
- Voice Change : Voice number
- Mixer : Volume
- Parameter Edit : Octave, Pan, Reverb Depth, Chorus Depth, DSP Depth

Organ Flutes (PSR-740)
- Organ type : 8 types
- Vibrato Speed
- Attack Mode
- Attack Footage
- Length
- Response
- Footage

Auto Accompaniment
- 160 Styles
- Accompaniment Track : RHYTHM1/2, BASS, CHORD 1/2, PAD, PHRASE1/2
- Accompaniment Track Settings : ON/OFF
- Accompaniment Control : ACMP ON/OFF, SYNC START, SYNC STOP, START/STOP, COUNT INTRO (PSR-740), INTRO, MAIN/AUTO FILL, SIMPLE ENDING/rit. (PSR-740), ENDING/rit.
- Beat Indicator
- Accompaniment Volume
- Voice Change : Voice number
- Mixer : Volume
- Parameter Edit : Pan, Reverb depth, Chorus depth, DSP depth (PSR-640)
- One Touch Setting
- Fingering Mode : Multi Finger/Single Finger/Fingered 1/Fingered 2/Full Keyboard

Groove (PSR-740)
- Groove type : 11 types
- Dynamics type : 18 types

Multi Pads
- 36 Multi Pad Banks
- 4 Pads + STOP
- Chord Match
- Naming

Digital Effects
PSR-740
- Reverb : 24 types
- Chorus : 20 types
- DSP (system/insertion) : 102 types
- DSP1 - 3 (Multi Effect) : 74 types
- DSP4 (microphone sound) : 74 types
- Harmony/Echo : 22 types
- Master EQ : 5types

PSR-640
- Reverb : 24 types
- Chorus : 16 types
- DSP (system/insertion) : 74 types
- Harmony/Echo : 22 types

Registration Memory
- 32 Registration Banks : 1 - 4
- Naming
- Accompaniment Freeze

Disk Operations
- Song playback/recording
- Load
- Save
- Utility : Format, Song Copy, Delete File

Song
- Song Volume
- Song Track Settings : ON/OFF
- Repeat Play
- Song Transpose

Song Recording
- Quick Record, Multi Record
- Recording Tracks: 1 - 16
- Punch In/Punch Out
- Quantize
- Naming
- Clear
- Setup Data : Volume, Octave, Pan, Reverb depth, Chorus depth, DSP depth

Multi Pad Recording
- User Pad Bank : 4 (37 - 40)
- Naming
- Clear
- Chord Match

Style Recording
- User Styles : 3 (161 - 163)
- Recording Tracks
  PSR-740 : 12 Sections x 8 tracks
  PSR-640 : 10 Sections x 8 tracks
- Drum Cancel
- Quantize
- Naming
- Clear
- Ctab :

MIDI
- Transmit settings
- Receive settings
- Local Control
- Clock
- Initial Data Send
- MIDI template

Other functions
- Metronome
- Part Octave
- Master Tuning
- Scale Tuning
- Split Point
- Touch Sensitivity
- Voice Set
- Footswitch function
- Foot Volume function
- Pitch Bend Range
- Modulation Wheel function (PSR-740)

Auxiliary Jacks
- DC IN 10-12V
- PHONES
- FOOT SWITCH
- FOOT VOLUME
- AUX OUT (R, L+R/L)
- MIDI IN/OUT, TO HOST
- MIC/LINE IN (PSR-740)

Amplifiers
- 6W + 6W

Speakers
- 12 cm (4-3/4") x 2 + 5cm x 2

Power Consumption
- 24W

Power Supply
- Adaptor : Yamaha PA-6 power adaptor
  Rated Voltage DC 10-12V
  Rated Current 2A

Dimensions (W x D x H)
- 973 x 399 x 161 (mm)
  (38-5/16" x 15-11/16" x 6-5/16")

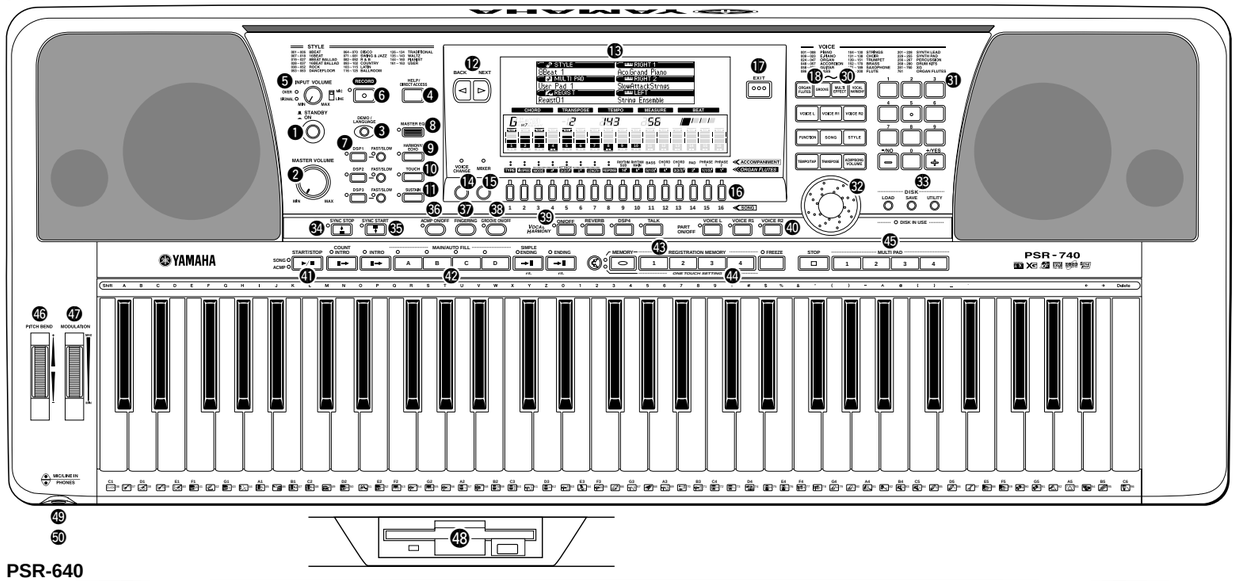
Weight
- PSR-740 : 10.2kg
- PSR-640 : 10kg

Supplied Accessories
- Sample Disk
- Music Stand
- Owner's Manual

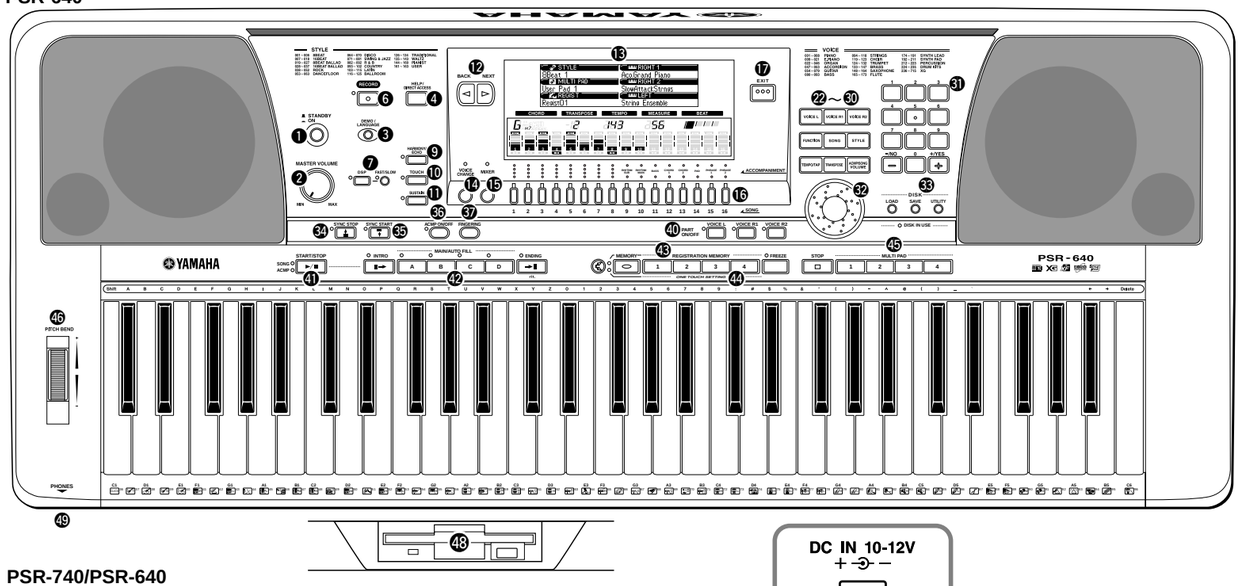
Optional Accessories
- Headphones : HPE-150
- AC Power Adaptor : PA-6
- Foot Switch : FC4, FC5
- Keyboard Stand : L-6, L-7

PANEL LAYOUT

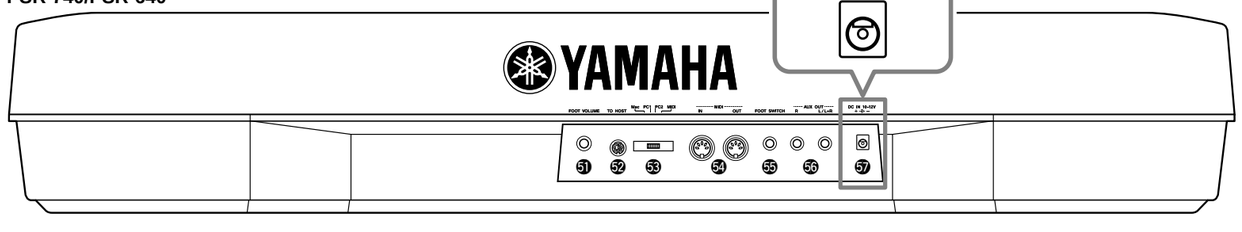
PSR-740



PSR-640



PSR-740/PSR-640



Top Panel Controls

❶ STANDBY/ON switch
❷ MASTER VOLUME control
❸ DEMO/LANGUAGE button
❹ HELP/DIRECT ACCESS button

❺ INPUT VOLUME control (PSR-740)
❻ RECORD button
❼ DSP
DSP1, DSP2, DSP3 (PSR-740)
DSP (PSR-640)
FAST/SLOW
❽ MASTER EQ button (PSR-740)
❾ HARMONY/ECHO button

❿ TOUCH button
⓫ SUSTAIN button
⓬ BACK button, NEXT button

⓭ LCD display
⓮ VOICE CHANGE button
⓯ MIXER button
⓰ TRACK 1 - 16 buttons
⓱ EXIT button
⓲ ORGAN FLUTES button (PSR-740)
⓳ GROOVE button (PSR-740)
⓴ MULTI EFFECT button (PSR-740)

㉑ VOCAL HARMONY button (PSR-740)

㉒ VOICE L button
㉓ VOICE R1 button
㉔ VOICE R2 button
㉕ FUNCTION button
㉖ SONG button
㉗ STYLE button
㉘ TEMPO/TAP button
㉙ TRANSPOSE button
㉚ ACMP/SONG VOLUME button

㉛ Number buttons
[1]-[0], [-/NO], [+/YES]
㉜ Data dial

㉝ DISK
SAVE button
LOAD button
UTILITY button
㉞ SYNC STOP button
㉟ SYNC START button
㊱ ACMP ON/OFF button
㊲ FINGERING button
㊳ GROOVE ON/OFF button (PSR-740)
㊴ VOCAL HARMONY
ON/OFF button (PSR-740)
REVERB button (PSR-740)
DSP4 button (PSR-740)
TALK button (PSR-740)
㊵ PART ON/OFF
VOICE L button
VOICE R1 button
VOICE R2 button
㊶ START/STOP button
㊷ Auto Accompaniment Section
INTRO button
COUNT INTRO button (PSR-740)
MAIN A, B, C, D buttons
ENDING button
SIMPLE ENDING button (PSR-740)
㊸ REGISTRATION MEMORY buttons

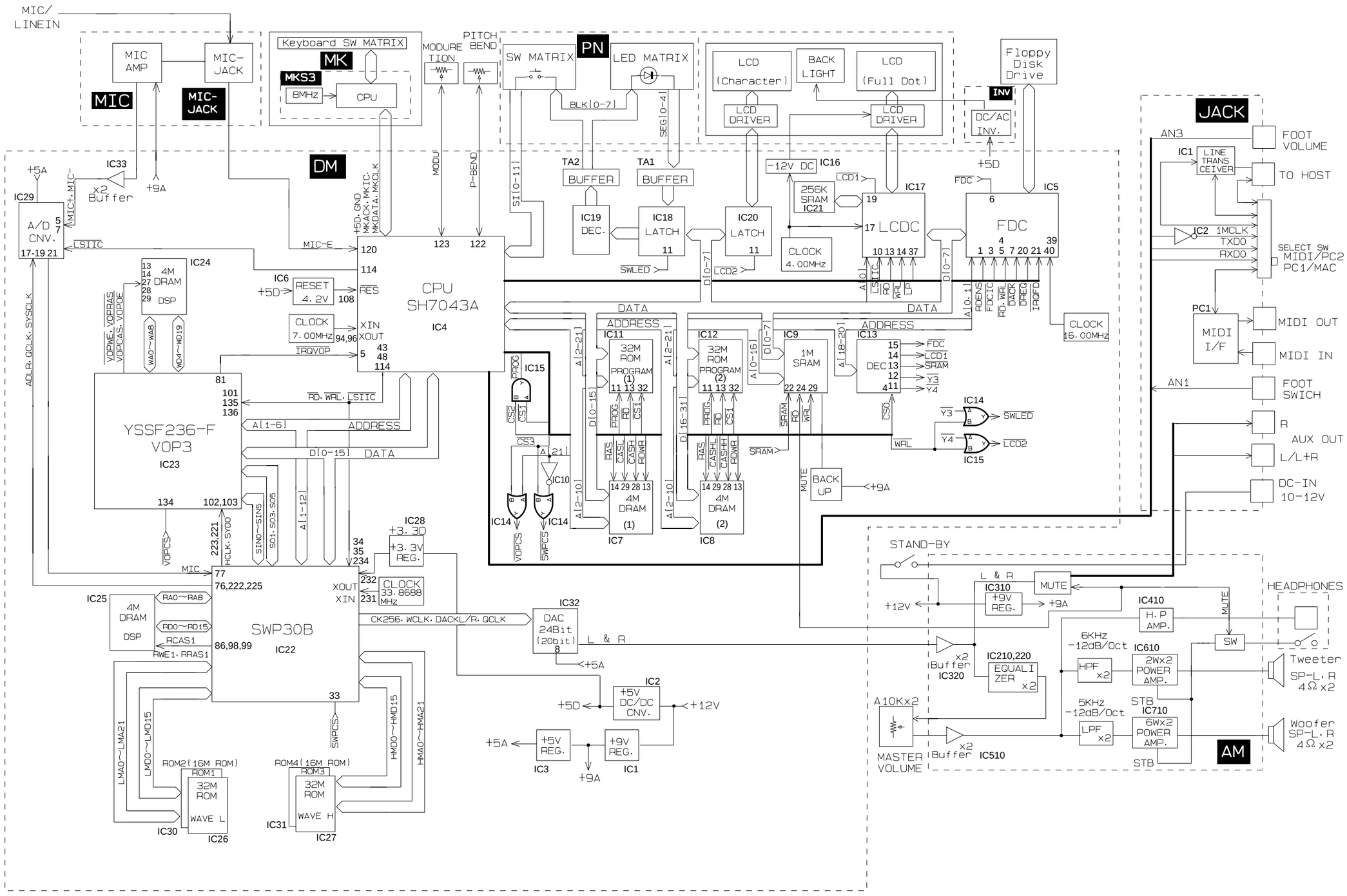
㊹ ONE TOUCH SETTING buttons

㊺ MULTI PAD buttons
㊻ PITCH BEND wheel
㊼ MODULATION wheel (PSR-740)
㊽ Disk Drive
㊾ PHONES jack
㊿ MIC/LINE IN jack (PSR-740)

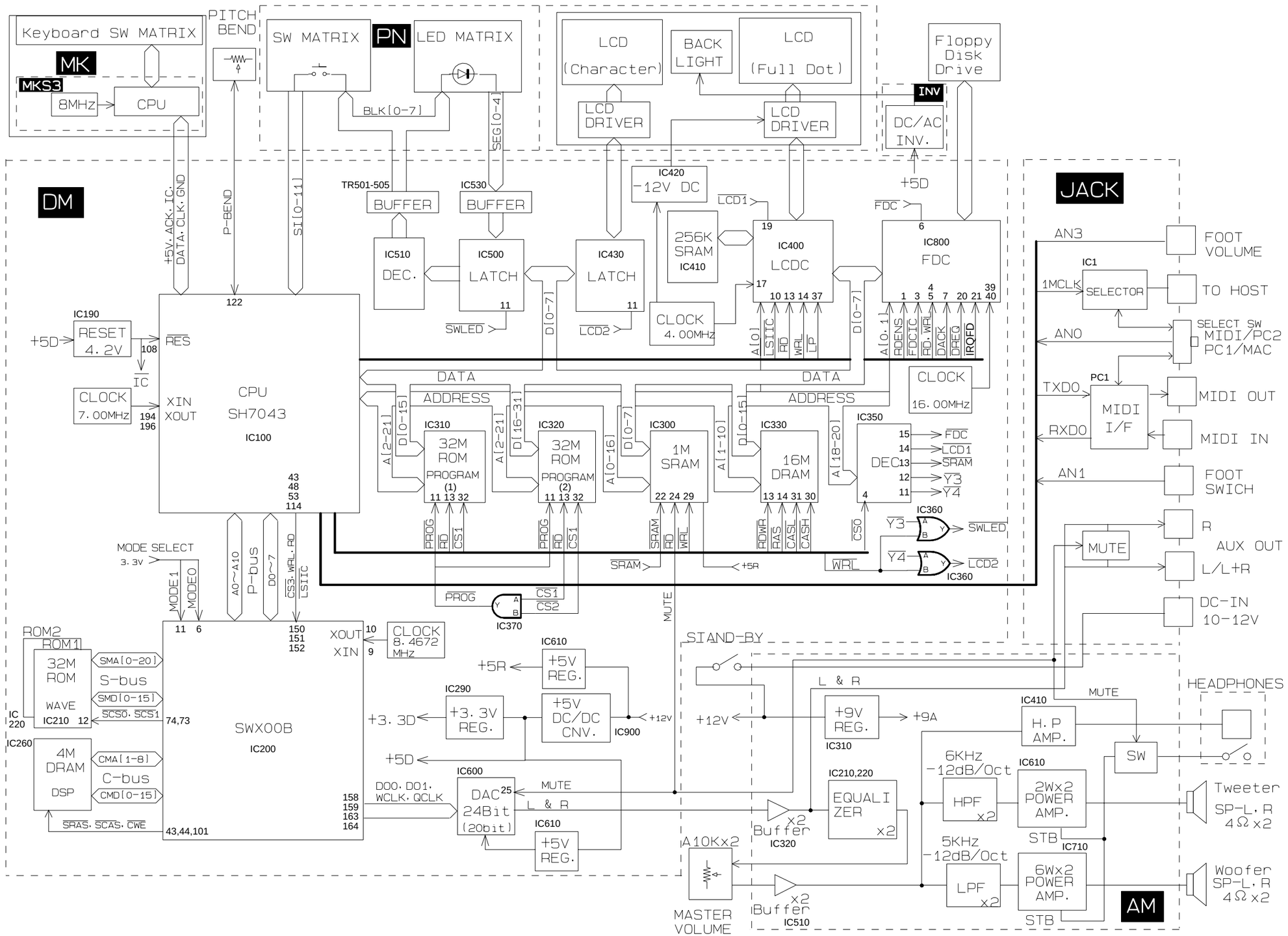
Rear Panel Controls

51 FOOT VOLUME jack
52 TO HOST connector
53 HOST SELECT switch
54 MIDI IN/OUT connectors
55 FOOT SWITCH jack
56 AUX OUT R, L/L+R jacks
57 DC IN 10-12V jack

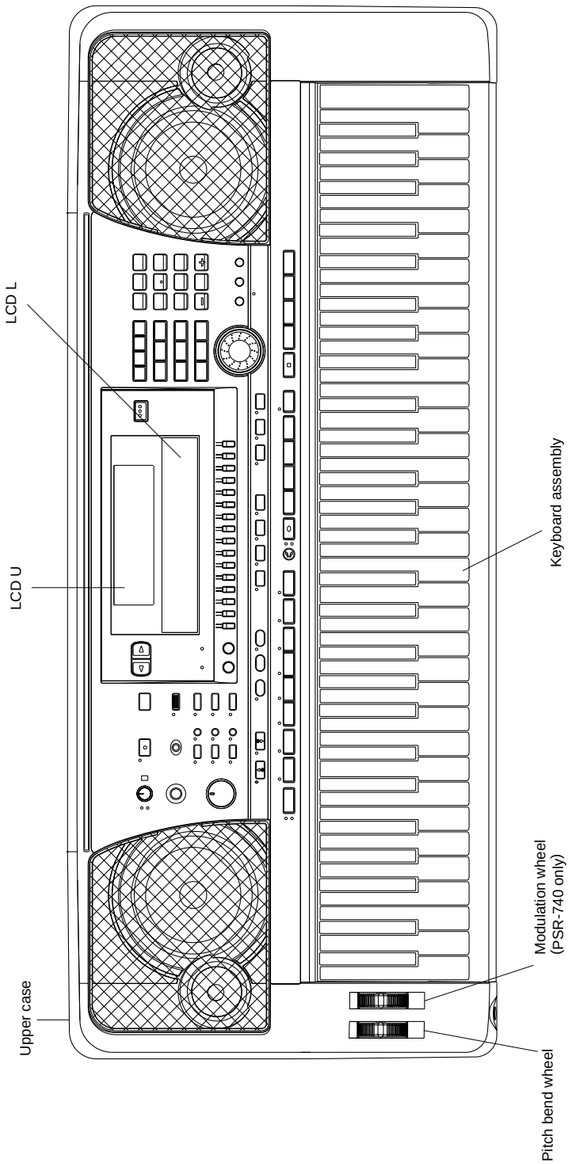
PSR-740 BLOCK DIAGRAM

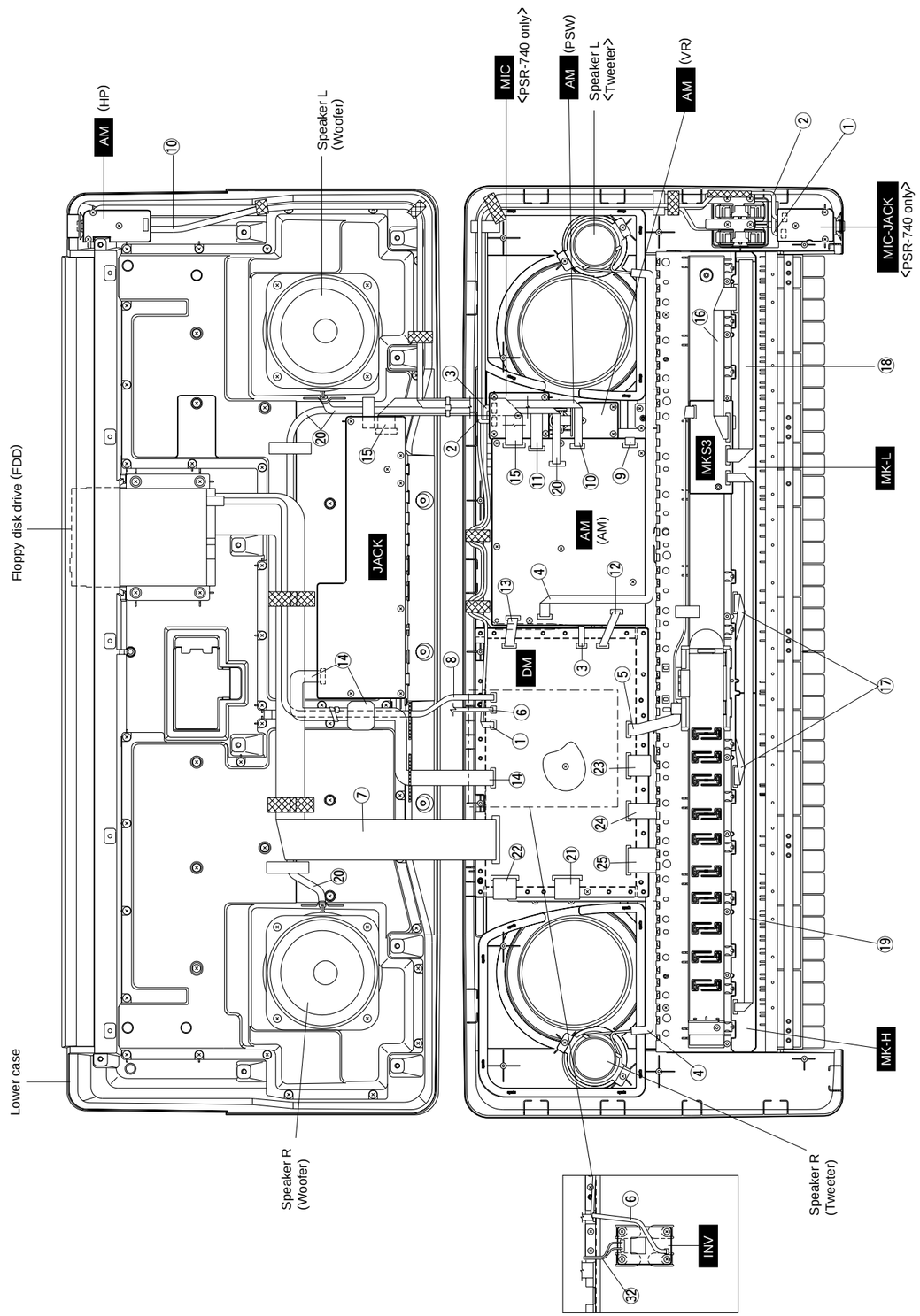


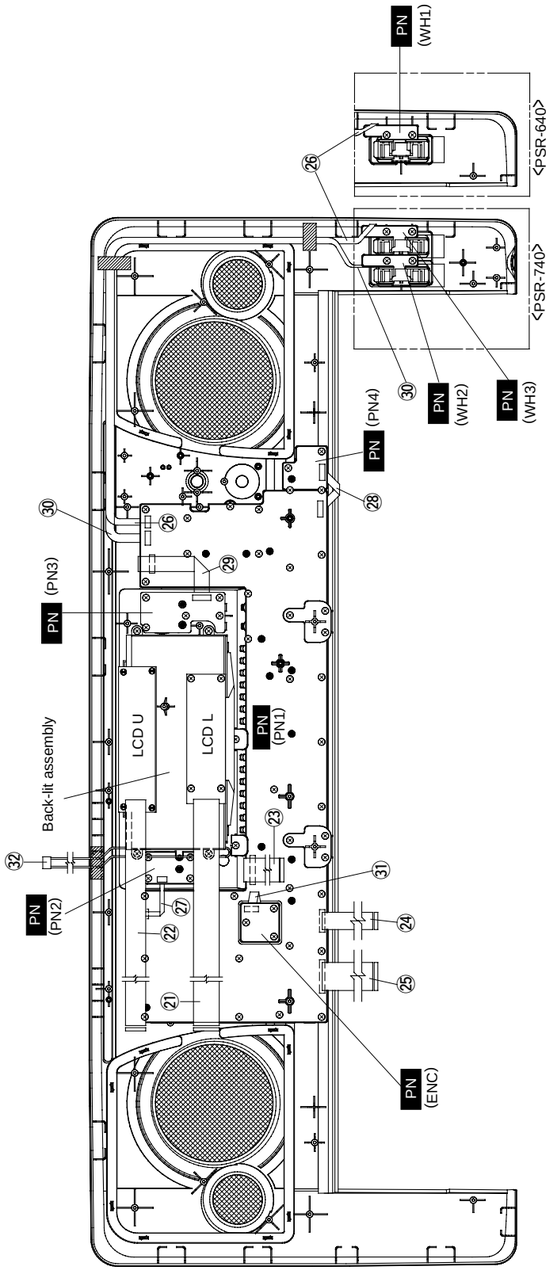
■ PSR-640 BLOCK DIAGRAM



■ CIRCUIT BOARD LAYOUT





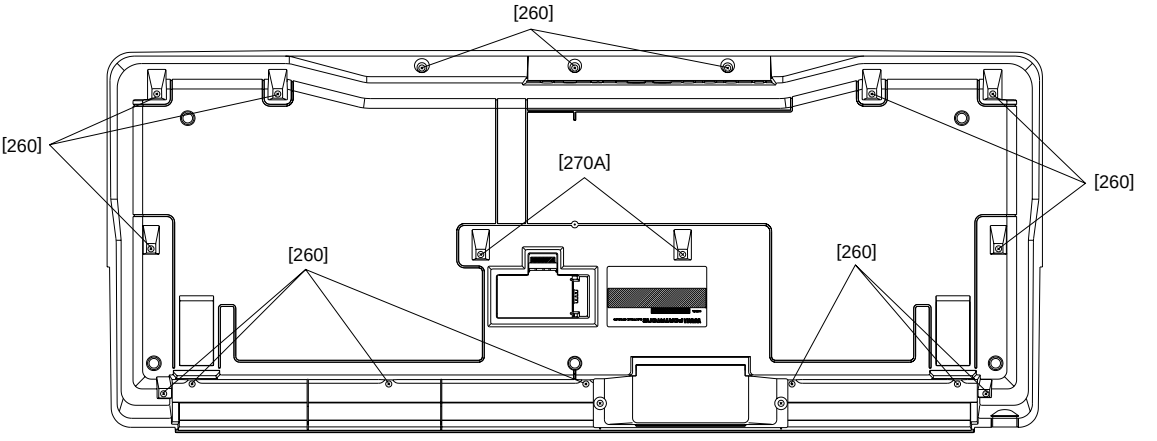


REF. NO.	DESTINATION		CONNECTOR ASSEMBLY	PIN/ LENGTH	PART NO.	REMARKS
①	MIC JACK-CN2	DM-CN3	MICJ-DM		V386730	PSR-740only
②	MIC JACK-CN1	MIC-CN1	MICJ-SH		V386740	PSR-740only
③	MIC-CN2	DM-CN15	MICSH-DM		V386750	PSR-740only
④	Tweeter L/R	AM(AM)-CN610	TWEETER		V386350	
⑤	DM-CN6	MKS3-CN1	DM-MKS		V379860	PSR-740
	DM-CN730	MKS3-CN1	DM-MKS		V379860	PSR-640
⑥	INV-CN1	DM-CN7	INV		V386760	PSR-740
	INV-CN1	DM-CN930	INV		V386760	PSR-640
⑦	FDD	DM-CN1	FDD		V386630	PSR-740
	FDD	DM-CN850	FDD		V386630	PSR-640
⑧	FDD	DM-CN8	FDD		V386640	PSR-740
	FDD	DM-CN920	FDD		V386640	PSR-640
⑨	AM(AM)-CN140	AM(VR)-CN150	AM-VR		V379800	
⑩	AM(AM)-CN410	AM(HP)-CN420	AM-HP		V379810	
⑪	AM(AM)-CN120	AM(PSW)-CN130	AM-PSW		V379820	
⑫	AM(AM)-CN320	DM-CN14	AM-DM1		V379840	PSR-740
	AM(AM)-CN320	DM-CN610	AM-DM1		V379840	PSR-640
⑬	AM(AM)-CN310	DM-CN2	AM-DM2		V379850	PSR-740
	AM(AM)-CN310	DM-CN910	AM-DM2		V379850	PSR-640
⑭	JACK-JK05	DM-CN5	JACK	8P/L450	VZ53110	PSR-740
	JACK-JK05	DM-CN720	JACK	8P/L450	VZ53110	PSR-640
⑮	AM(AM)-CN110	JACK-JK09	AM-JK		V379830	
⑯	MK-L	MKS3-CN2	(S4)	12P/L190	VU95890	
⑰	MK-L	MK-H	(S5)	12P/L215	VU65950	
⑱	MK-L	MKS3-CN3	(S6)	7P/L250	VU65940	
⑲	MK-H	MKS3-CN4	(S7)	5P/L615	VU65960	
⑳	Woofer L/R	AM(AM)-CN620	WOOFER		V386340	
㉑	DM-CN11	LCD L	DM-LCD1		V379910	PSR-740
	DM-CN420	LCD L	DM-LCD1		V379910	PSR-640
㉒	DM-CN9	LCD U	DM-LCD2		V379920	PSR-740
	DM-CN410	LCD U	DM-LCD2		V379920	PSR-640
㉓	DM-CN12	PN(PN1)-CN2	DM-PN1		V379880	PSR-740
	DM-CN510	PN(PN1)-CN2	DM-PN1		V379880	PSR-640
㉔	DM-CN10	PN(PN1)-CN1	DM-PN2		V379890	PSR-740
	DM-CN520	PN(PN1)-CN1	DM-PN2		V379890	PSR-640
㉕	DM-CN4	PN(PN1)-CN8	DM-PN3		V379900	PSR-740
	DM-CN710	PN(PN1)-CN8	DM-PN3		V379900	PSR-640
㉖	PN(PN1)-CN6A	PN(WH3)-CN6B	PN1-PB		V379940	PSR-740
	PN(PN1)-CN6A	PN(WH1)-CN11	PN1-PB		V379940	PSR-640
㉗	PN(PN1)-CN8A	PN(PN2)-CN8B	PN1-PN4		V379950	
㉘	PN(PN1)-CN10A	PN(PN4)-CN10B	PN1-PN5		V379960	
㉙	PN(PN1)-CN9A	PN(PN3)-CN9B	PN1-PN6		V379970	
㉚	PN(PN1)-CN7A	PN(WH2)-CN7B	PN1-MOD		V379980	
㉛	PN(PN1)-CN5A	PN(ENC)-CN5B	PN1-ENC		V379990	
㉜	Back-lit assembly	INV-CN2	—	—	—	

DISASSEMBLY PROCEDURE

1. Lower Case Assembly

1-1 Remove the sixteen (16) screws marked [260] and the two (2) screws marked [270A]. The lower case assembly can then be removed. (Fig.1)



[260]: Bind Head Tapping Screw-P 3.0 X 12 MFZN2Y (EP600300)
[270A]: Bind Head Tapping Screw-P 3.0 X 25 MFZN2Y (VK228100)

Fig.1

2. DM Circuit Board

2-1 Remove the lower case assembly. (See procedure 1.)

2-2 Remove the four (4) screws marked [240A] and the screws (PSR-740: 20pcs, PSR-640: 11pcs) marked [250A]. The shield cover L can then be removed. (Fig.2)

2-3 Remove the one (1) screw marked [250B]. The DM circuit board can then be removed. (Fig.3)

3. INV Circuit Board

3-1 Remove the lower case assembly. (See procedure 1.)

3-2 Remove the four (4) screws marked [250C]. The INV circuit board can then be removed. (Fig.2)

4. MIC Circuit Board (PSR-740 only)

4-1 Remove the lower case assembly. (See procedure 1.)

4-2 Remove the five (5) screws marked [240B]. The MIC circuit board can then be removed. (Fig.2)

5. MIC-JACK Circuit Board (PSR-740 only)

5-1 Remove the lower case assembly. (See procedure 1.)

5-2 Remove the three (3) screws marked [240C]. The MIC-JACK circuit board can then be removed. (Fig.2)

6. AM(AM), AM(PSW) and AM(VR) Circuit Boards

6-1 Remove the lower case assembly. (See procedure 1.)

6-2 AM(AM) Circuit Board:
Remove the seven (7) screws marked [240D]. The AM(AM) circuit board can then be removed. (Fig.3)

6-3 AM(PSW) Circuit Board:
Remove the two (2) screws marked [240E]. The AM(PSW) circuit board can then be removed. (Fig.3)

6-4 AM(VR) Circuit Board:
Remove the three (3) screws marked [240F]. The AM(VR) circuit board can then be removed. (Fig.3)

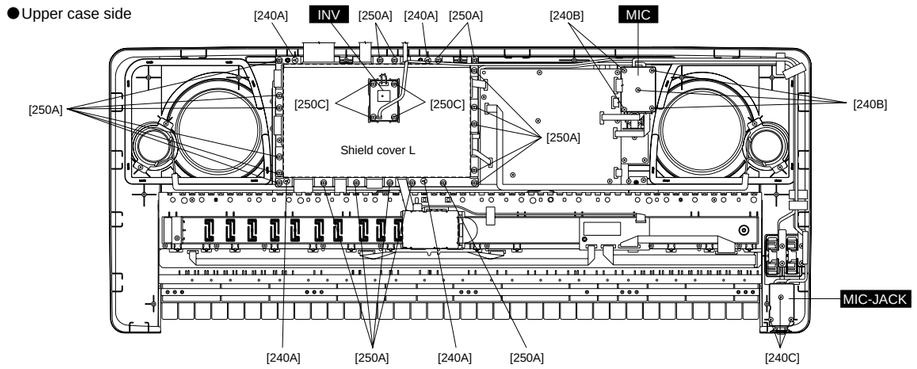


Fig.2

[240]: Bind Head Tapping Screw-P 3.0 X 8 MFZN2Y (EP600280)
[250]: Bind Head Tapping Screw-P 3.0 X 6 MFZN2Y (VK600130)

7. PN(WH1), PN(WH2) and PN(WH3) Circuit Boards

7-1 Remove the lower case assembly. (See procedure 1.)

7-2 **PN(WH1) Circuit Board (PSR-640):**
Remove the two (2) screws marked [190A]. The wheel assembly can then be removed. Remove the wheel with the spring from the wheel assembly. (Fig.3)

7-3 **PN(WH2) Circuit Board (PSR-740):**
Remove the two (2) screws marked [190B]. The PN(WH2) circuit board can then be removed with the wheel. Remove the wheel from the PN(WH2) circuit board. (Fig.3)

7-4 **PN(WH3) Circuit Board (PSR-740):**
Remove the two (2) screws marked [190C]. The wheel assembly can then be removed. Remove the wheel with the spring from the wheel assembly. (Fig.3)

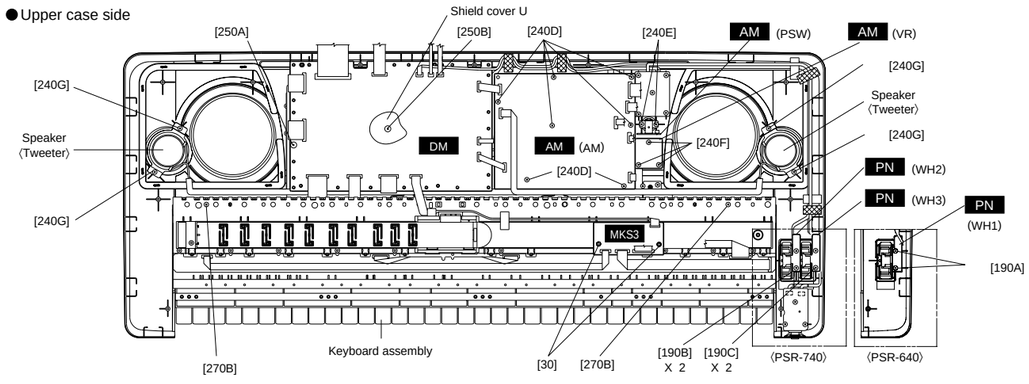


Fig.3

[30]: Bind Head Tapping Screw-P 3.0 X 8 MFZN2BL (EP630220)
[190]: Bind Head Tapping Screw-P 3.0 X 8 MFZN2Y (EP600280)
[240]: Bind Head Tapping Screw-P 3.0 X 8 MFZN2Y (EP600280)
[250B]: Bind Head Tapping Screw-P 3.0 X 6 MFZN2Y (EP600130)
[270B]: Bind Head Tapping Screw-P 3.0 X 25 MFZN2Y (VK228100)

8. Speakers(Tweeter)

8-1 Remove the lower case assembly. (See procedure 1.)

8-2 Remove the four (4) screws marked [240G]. The right and left speakers(tweeter) can then be removed. (Fig.3)

9. Keyboard Assembly

9-1 Remove the lower case assembly. (See procedure 1.)

9-2 Remove the two (2) screws marked [270B]. The keyboard assembly can then be removed. (Fig.3)

10. PN(PN1), PN(PN2), PN(PN3), PN(PN4) and PN(ENC) Circuit Boards

10-1 Remove the lower case assembly. (See procedure 1.)

10-2 Remove the DM circuit board. (See procedure 2.)

10-3 Remove the one (1) screw marked [240H]. The shield cover U can then be removed. (Fig.3)

10-4 Remove the AM(AM) circuit board. (See procedure 6-2.)

10-5 Remove the keyboard assembly. (See procedure 9.)

10-6 **PN(PN1) Circuit Board:**
Remove the one (1) screw marked [190D]. The PCB bracket can then be removed. (Fig.4)
Remove the six (6) screws marked [190E]. The angle brackets can then be removed. (Fig.4)
Remove the thirty (30) screws marked [190F]. The PN(PN1) circuit board can then be removed. (Fig.4)

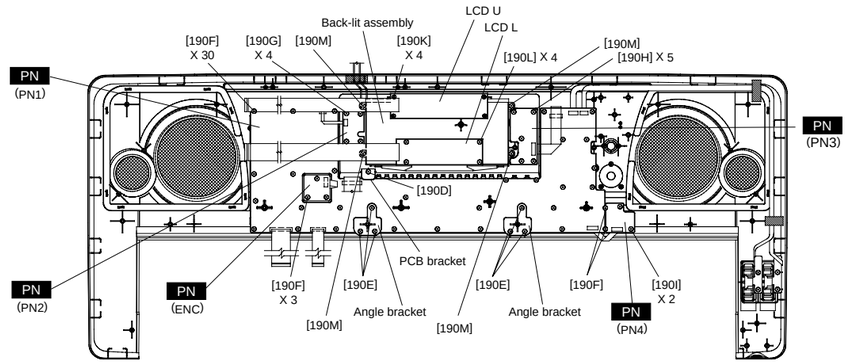
10-7 **PN(PN2) Circuit Board:**
Remove the four (4) screws marked [190G]. The PN(PN2) circuit board can then be removed. (Fig.4)

10-8 **PN(PN3) Circuit Board:**
Remove the five (5) screws marked [190H]. The PN(PN3) circuit board can then be removed. (Fig.4)

10-9 **PN(PN4) Circuit Board:**
Remove the two (2) screws marked [190F] and the two (2) screws marked [190I]. The PN(PN4) circuit board can then be removed. (Fig.4)

10-10 **PN(ENC) Circuit Board:**
Remove the three (3) screws marked [190J]. The PN(ENC) circuit board can then be removed. (Fig.4)

✻ When removing the PN(ENC) circuit board, the ENC knob will be removed simultaneously.



[190]: Bind Head Tapping Screw-P 3.0 X 8 MFZN2Y (EP600280)

Fig.4

11. LCD(U) and LCD(L)

11-1 Remove the lower case assembly. (See procedure 1.)
11-2 Remove the DM circuit board. (See procedure 2.)
11-3 Remove the one (1) screw marked [240H]. The shield cover U can then be removed. (Fig.3)
11-4 Remove the AM(AM) circuit board. (See procedure 6-2.)
11-5 Remove the four (4) screws marked [190K] and the four (4) screws marked [190L]. The circuit boards of the LCD U and L can then be removed . (Fig.4)
11-6 Remove the four (4) screws marked [190M]. The LCD U and L can then be removed with the back-lit assembly. (Fig.4)

12. AM(HP) Circuit Board

12-1 Remove the lower case assembly. (See procedure 1.)
12-2 Remove the three (3) screws marked [240I]. The AM(HP) circuit board can then be removed. (Fig.5)

13. JACK Circuit Board

13-1 Remove the lower case assembly. (See procedure 1.)
13-2 Remove the eight (8) screws marked [50]. The JACK circuit board can then be removed. (Fig.5)

14. Speakers(Woofer)

14-1 Remove the lower case assembly. (See procedure 1.)
14-2 Remove the eight (8) screws marked [120]. The right and left speakers(woofer) can then be removed. (Fig.5)

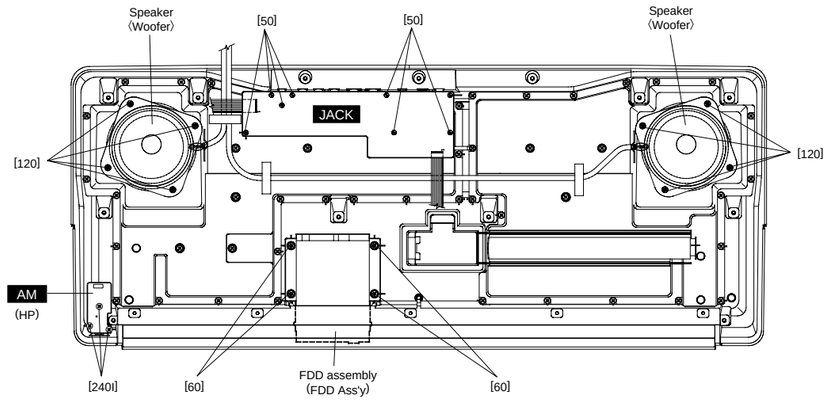
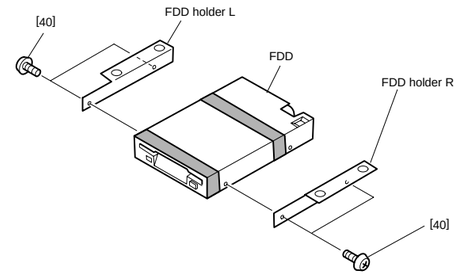


Fig.5

[50]: Bind Head Tapping Screw-P 3.0 X 8 MFZN2Y (EP600280)
[60]: Bind Head Tapping Screw-P 4.0 X 16 MFZN2Y (VM839600)
[120]: Bind Head Tapping Screw-P 4.0 X 10 MFZN2Y (EP640500)
[240I]: Bind Head Tapping Screw-P 3.0 X 8 MFZN2Y (EP600280)

15. FDD

15-1 Remove the lower case assembly. (See procedure 1.)
15-2 Remove the four (4) screws marked [60]. The FDD assembly can then be removed. (Fig.5)
15-3 Remove the four (4) screws marked [40]. The FDD holder L and R can then be removed from the FDD assembly. (Fig.6)



[40]: Bind Head Screw 3.0 X 6 MFZN2BL (EG330360)

Fig.6

16. Disassembling the keyboard assembly

16-1 Remove the keyboard assembly. (See procedure 9.)
16-2 Remove the two (2) screws marked [30]. The MKS3 circuit board can then be removed. (Fig.3)
16-3 Remove the MK circuit board while pressing the fifteen (15) hooks A inward, and then remove the rubber contact. (Fig.7)
16-4 Remove the twenty-one (21) screws marked [140], then remove the black keys from the lower notes. Afterwards, remove the white keys DFA and C' and then remove the white keys CEGB from the higher notes. At this time, lift the keys from the front and slide them towards you. the keys can then be removed from the assembly. (Fig.8)

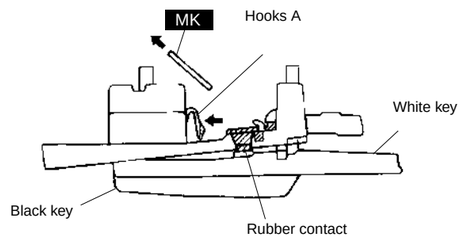
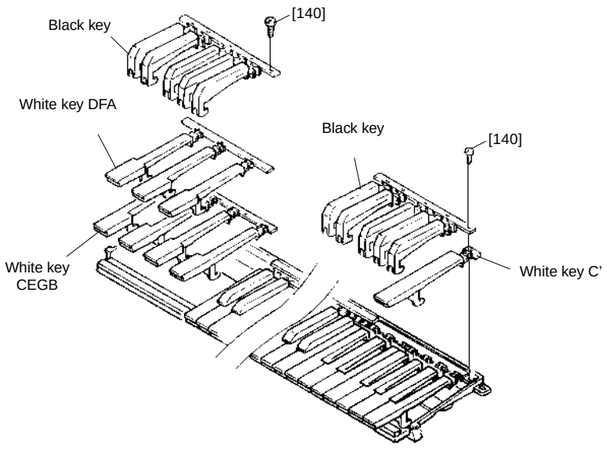


Fig.7



[140]: Bind Head Tapping Screw-P 3.0 X 16 MFZN2BL (VB205200)
Bind Head Tapping Screw-P 3.0 X 16 MFZN2B (VS756700)

Fig.8

17. Assembling the keyboard assembly

17-1 Install the white keys CEGB from the lower notes, and then install the DFA keys and C' key. Afterwards install the black keys from the higher notes, and tighten the twenty-one (21) screws marked [140]. (Fig.8)

17-2 Install the rubber contacts in the assembly while pressing the keys as shown in Figure 9. Check that the rubber contact has been firmly placed into position in the area indicated by the arrow in Figure 10.

✻ When fitting the rubber contacts, raise both ends of the frame so that keys do not push the rubber contact up. Install the MK circuit board in the assembly so that the hooks B hold it as shown in Figure 11. (Fig.9, 10, 11)

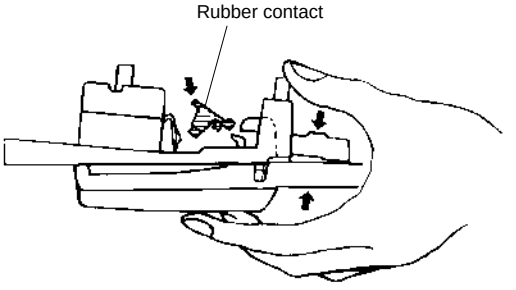


Fig.9

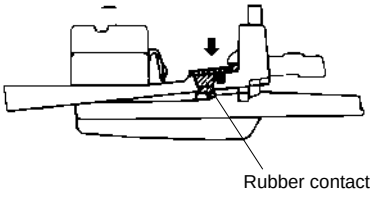


Fig.10

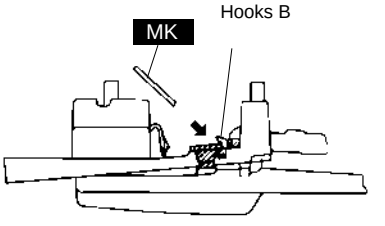


Fig.11

LSI PIN DESCRIPTION

● **SH-7043A** (XW485100) **CPU**
SH-7043 (XW180100) **CPU**

PIN NO.	NAME	I/O	FUNCTION	PIN NO.	NAME	I/O	FUNCTION
1	/WRHH/PA23	O	HH write/Port A	73	D15	I/O	
2	DACK0/PE14	O	DMA transfer strobe/Port E	74	D14	I/O	Data bus
3	/WRHL/PA22	O	HL write/Port A	75	D13	I/O	
4	/CASHH/PA21	I/O	HH Column address strobe/Port A	76	D12	I/O	
5	DACK1/PE15	O	DMA transfer strobe/Port E	77	VCC	I	Power supply
6	VSS	I	Ground	78	D11	I/O	Data bus
7	A0	O		79	VSS	I	Ground
8	A1	O		80	D10	I/O	
9	A2	O	Address bus	81	D9	I/O	
10	A3	O		82	D8	I/O	Data bus
11	A4	O		83	D7	I/O	
12	VCC	I	Power supply	84	D6	I/O	
13	A5	O	Address bus	85	VCC	I	Power supply
14	VSS	I	Ground	86	D5	I/O	Data bus
15	A6	O		87	VSS	I	Ground
16	A7	O		88	D4	I/O	
17	A8	O		89	D3	I/O	
18	A9	O		90	D2	I/O	Data bus
19	A10	O		91	D1	I/O	
20	A11	O	Address bus	92	D0	I/O	
21	A12	O		93	VSS	I	Ground
22	A13	O		94	XTAL	I	Crystal oscillator
23	A14	O		95	MD3	I	Mode select
24	A15	O		96	EXTAL	I	Crystal oscillator
25	A16	O		97	MD2	I	Mode select
26	VCC	I	Power supply	98	NMI	-	Non-maskable interrupt
27	A17	O	Address bus	99	VCC/FW	I	Power supply
28	VSS	I	Ground	100	PA16	I/O	Port A
29	/CASHL/PA20	I/O	HL Column address strobe/Port A	101	PA17	I/O	Port A
30	PA19	I/O	Port A	102	MD1	I	Mode select
31	/RAS/PB2	O	Row address strobe/Port B	103	MD0	I	Mode select
32	/CASL/PB3	O	Column address strobe (low) /Port B	104	PLLVCC	I	PLL Power supply
33	PA18	I/O	Port A	105	PLLCAP	I	PLL capacitor
34	/CASH/PB4	O	Column address strobe (high) /Port B	106	PLLVSS	I	PLL Ground
35	VSS	I	Ground	107	CK/PA15	I/O	Clock/Port A
36	RDWR/PB5	O	DRAM read/write /Port B	108	/RES	I	Reset
37	A18	O		109	DREQ0/PE0	I/O	DMA transfer request/Port E
38	A19	O	Address bus	110	TIOC0B/PE1	I/O	MTU input capture/output compare (ch 0)/Port E
39	A20	O		111	/DREQ1/PE2	I/O	DMA transfer request/Port E
40	VCC	I	Power supply	112	VCC	I	Power supply
41	A21	O	Address bus	113	PE3	I/O	
42	VSS	I	Ground	114	PE4	I/O	Port E
43	/RD	O	Read	115	PE5	I/O	
44	/WDTOVF	O	Watch dog timer overflow	116	PE6	I/O	
45	D31	I/O	Data bus	117	VSS	I	Ground
46	D30	I/O	Data bus	118	AN0 /PF0	I	
47	/WRH	O	High write	119	AN1/ PF1	I	
48	/WRL	O	Low write	120	AN2 /PF2	I	
49	/CS1	O	Chip select	121	AN3 /PF3	I	Analog input/Port F
50	/CS0	O	Chip select	122	AN4 /PF4	I	
51	/IRQ3/PA9/TCLKD	I/O	Interrupt request/Port A/clock	123	AN5/PF5	I	
52	/IRQ2/PA8/TCKLC	I/O	Interrupt request/Port A/clock	124	AVSS	I	Analog ground
53	/CS3	O	Chip select	125	AN6/PF6	I	Analog input/ Port F
54	/CS2	O	Chip select	126	AN7/PF7	I	Analog input /Port F
55	VSS	I	Ground	127	AVREF	I	Analog reference voltage
56	D29	I/O		128	AVCC	I	Analog power supply
57	D28	I/O		129	VSS	I	Ground
58	D27	I/O	Data bus	130	RxDO	I	Receive data
59	D26	I/O		131	TxDO	O	Transmit data
60	D25	I/O		132	/IRQ0/SCK0	I	Interrupt request/Serial clock
61	VSS	I	Ground	133	RxD1	I	Receive data
62	D24	I/O	Data bus	134	TxD1/PA4	I/O	SCI/Port A
63	VCC	I	Power supply	135	VCC	I	Power supply
64	D23	I/O		136	/IRQ1/SCK1	I	Interrupt request/Serial clock
65	D22	I/O		137	PE7	I/O	
66	D21	I/O		138	PE8	I/O	Port E
67	D20	I/O	Data bus	139	PE9	I/O	
68	D19	I/O		140	PE10	I/O	
69	D18	I/O		141	VSS	I	Ground
70	D17	I/O		142	PE11	I/O	
71	VSS	I	Ground	143	PE12	I/O	Port E
72	D16	I/O	Data bus	144	PE13	I/O	

● **HG73C205AFD** (XU947C00) **SWX00B** TONE GENERATOR

PIN NO.	NAME	I/O	FUNCTION	PIN NO.	NAME	I/O	FUNCTION
1	ICN	I	Initial clear	85	CMA3	O	Program address bus
2	RFCLKI	I	PLL Clock	86	CMA8	O	Program address bus
3	TM2	I	PLL Control	87	CMA2	O	Program address bus
4	AVDD_PLL		Power supply	88	CRD	O	read signal
5	AVSS_PLL		Ground	89	CMA1	O	Program address bus
6	MODE0	I	SWX dual mode	90	CUB	O	high byte effective signal
7	VCC7		Power supply	91	VCC91		Power supply
8	GND8		Ground	92	GHND92		Ground
9	XIN	I	crystal oscillator	93	CS1	O	CS signal
10	XOUT	O	crystal oscillator	94	CMA0	O	Program address bus
11	MODE1	I	SWX separate mode	95	CLB	O	low byte effective signal
12	TEST0	I	TEST pin	96	CMA12	O	Program address bus
13	TESTON	I	TEST pin	97	CMA11	O	
14	AN0-P40	I	A/D converter	98	CMA10	O	
15	AN1-P41	I	A/D converter	99	CMA9	O	
16	AN2-P42	I	A/D converter	100	GND100		Ground
17	AN3-P43	I	A/D converter	101	CWE	O	write signal
18	AVDD_AN		Power supply	102	CMA16	O	Program address bus
19	AVSS_AN		Ground	103	CMA15	O	Program address bus
20	TXD0	O	for MIDI or TO-HOST	104	CMA14	O	Program address bus
21	TXD1	O	for MIDI	105	CMA13	O	Program address bus
22	EXCLK	I	Crystal oscillator	106	CMD8	I/O	Program memory Data bus
23	SMD11	I/O	Wave memory data bus	107	CMD7	I/O	Program memory Data bus
24	SMD4	I/O	Wave memory data bus	108	CMD9	I/O	Program memory Data bus
25	SMD3	I/O	Wave memory data bus	109	CMD6	I/O	Program memory Data bus
26	SMD12	I/O	Wave memory data bus	110	CMD10	I/O	Program memory Data bus
27	SMD10	I/O	Wave memory data bus	111	CMD5	I/O	Program memory Data bus
28	SMD5	I/O	Wave memory data bus	112	CMD11	I/O	Program memory Data bus
29	SMD2	I/O	Wave memory data bus	113	CMD4	I/O	Program memory Data bus
30	SMD13	I/O	Wave memory data bus	114	CMD12	I/O	Program memory Data bus
31	SMD9	I/O	Wave memory data bus	115	CMD3	I/O	Program memory Data bus
32	SMD6	I/O	Wave memory data bus	116	CMD13	I/O	Program memory Data bus
33	SMD1	I/O	Wave memory data bus	117	CMD2	I/O	Program memory Data bus
34	SMD14	I/O	Wave memory data bus	118	CMD14	I/O	Program memory Data bus
35	VCC35		Power supply	119	VCC119		Power supply
36	GND36		Ground	120	GND115		Ground
37	SMD8	I/O	Wave memory data bus	121	CMD1	I/O	Program memory Data bus
38	SMD7	I/O	Wave memory data bus	122	CMD15	I/O	Program memory Data bus
39	SMD0	I/O	Wave memory data bus	123	CMD0	I/O	Program memory Data bus
40	SMD15	I/O	Wave memory data bus	124	CMA21	O	Program address bus
41	SOE	O	read signal	125	PDT15	I/O	SWX access data bus
42	SWE	O	write signal	126	PDT14	I/O	
43	SRAS	O	RAS signal	127	PDT13	I/O	
44	SCAS	O	CAS signal	128	PDT12	I/O	
45	REFRESH	O	REFRESH signal	129	PDT11	I/O	
46	CS0	O	CS signal	130	PDT10	I/O	
47	SMA0	O	Memory address bus	131	PDT9	I/O	
48	SMA16	O	Memory address bus	132	PDT8	I/O	
49	VCC49		Power supply	133	VCC133		Power supply
50	GND50		Ground	134	GND134		Ground
51	SMA1	O	Memory address bus	135	PDT7	I/O	SWX access data bus
52	SMA15	O	Memory address bus	136	PDT6	I/O	
53	SMA2	O	Memory address bus	137	PDT5	I/O	
54	SMA14	O	Memory address bus	138	PDT4	I/O	
55	SMA3	O	Memory address bus	139	PDT3	I/O	
56	SMA13	O	Memory address bus	140	PDT2	I/O	
57	SMA4	O	Memory address bus	141	PDT1	I/O	
58	SMA12	O	Memory address bus	142	PDT0	I/O	
59	SMA5	O	Memory address bus	143	VCA143		Power supply
60	GND60		Ground	144	GND144		Ground
61	VCC61		Power supply	145	PAD2	I	SWX access address bus
62	SMA11	O	Memory address bus	146	PAD1	I	
63	SMA6	O	Memory address bus	147	PAD0	I	
64	SMA10	O	Memory address bus	148	VCC148		Power supply
65	SMA7	O	Memory address bus	149	GND149		Ground
66	SMA9	O	Memory address bus	150	PCS	I	Chip select
67	SMA17	O	Memory address bus	151	PWR	I	write enable
68	SMA8	O	Memory address bus	152	PRD	I	read enable
69	SMA18	O	Memory address bus	153	RXD0	I	for Midi or TO-HOST
70	SMA19	O	Memory address bus	154	RXD1	I	for Midi or Key scan
71	SMA20	O	Memory address bus	155	SCLKI	I	EXT Clock
72	SMA21	O	Memory address bus	156	ADIN	I	A/D converter
73	SMA22	O	Memory address bus	157	ADLR	O	A/D converter LR clock
74	SMA23	O	Memory address bus	158	DO0	O	DAC
75	CMA20	O	Program address bus	159	DO1	O	DAC
76	CMA19	O	Program address bus	160	SYSCLK	O	1/2 clock
77	VCC77		Power supply	161	VCC161		Power supply
78	GND78	O	Ground	162	GND162		Ground
79	CMA18	O	Program address bus	163	WCLK	O	for DAC LR clock
80	CMA17	O	Program address bus	164	QCLK	O	1/12 clock
81	CMA5	O	Program address bus	165	BCLK	O	IIS-DAC clock
82	CMA6	O	Program address bus	166	SYI	I	Synch signal
83	CMA4	O	Program address bus	167	IRQ0	I	Interrupt request
84	CMA7	O	Program address bus	168	NMI	I	Interrupt request

● **TC203C760HF-002** (XS725A00)
SWP30B (AWM Tone Generator coped with MEG) Standard Wave Processor

PIN NO.	NAME	I/O	FUNCTION
1	Vss		(Ground)
2	CA0	I	Address bus internal register
3	CA1	I	
4	CA2	I	
5	CA3	I	
6	CA4	I	
7	CA5	I	
8	CA6	I	
9	CA7	I	
10	CA8	I	
11	CA9	I	
12	CA10	I	
13	CA11	I	
14	VSS		(Ground)
15	CD0	I/O	Data bus of internal register
16	CD1	I/O	
17	CD2	I/O	
18	CD3	I/O	
19	CD4	I/O	
20	CD5	I/O	
21	CD6	I/O	
22	CD7	I/O	
23	CD8	I/O	
24	CD9	I/O	
25	CD10	I/O	
26	CD11	I/O	
27	CD12	I/O	
28	CD13	I/O	
29	CD14	I/O	
30	VDD		(Power supply)
31	VSS		(Ground)
32	CD15	I/O	
33	/CS	I	Chip select
34	/WR	I	Write strobe
35	/RD	I	Read strobe
36	VDDS		(Power supply)
37	SYSH0	O	NSYS/LNSYS upper 16 bits
38	SYSH1	O	
39	SYSH2	O	
40	SYSH3	O	
41	SYSH4	O	
42	SYSH5	O	
43	SYSH6	O	
44	SYSH7	O	
45	KONO0	O	Key on data
46	KONO1	O	
47	KONO2	O	
48	KONO3	O	
49	VSS		(Ground)
50	SYSL0	I/O	NSYS input/LNSYS output lower 8 bits
51	SYSL1	I/O	
52	SYSL2	I/O	
53	SYSL3	I/O	
54	SYSL4	I/O	
55	SYSL5	I/O	
56	SYSL6	I/O	
57	SYSL7	I/O	
58	KONI0	I	Key on data
59	KONI1	I	
60	VDDS	I	(Power supply)
61	VSS		(Ground)
62	KONI2	I	
63	KONI3	I	
64	DAC0	O	DAC output
65	DAC1	O	
66	WCLK	O	DAC0/DAC1 word clock
67	MELO0	O	MEL wave data output
68	MELO1	O	
69	MELO2	O	
70	MELO3	O	
71	MELO4	O	
72	MELO5	O	
73	MELO6	O	
74	MELO7	O	
75	VDDS		(Power supply)
76	ADLR	O	ADC word clock
77	MELI0	I	MEL wave data input
78	MELI1	I	
79	MELI2	I	
80	MELI3	I	
81	MELI4	I	
82	MELI5	I	
83	MELI6	I	
84	MELI7	I	
85	VSS		(Ground)
86	/RCAS	O	DRAM column address strobe
87	RA8	O	DRAM address bus
88	RA7	O	
89	RA6	O	
90	VDD		(Power supply)
91	VSS		(Ground)
92	RA5	O	
93	RA4	O	
94	RA3	O	
95	RA2	O	
96	RA1	O	
97	RA0	O	
98	/RRAS	O	DRAM row address strobe
99	/RWE	O	DARM write enable
100	VSS		(Ground)
101	RD7	I/O	DRAM data bus
102	RD6	I/O	
103	RD5	I/O	
104	RD4	I/O	
105	RD3	I/O	
106	RD2	I/O	
107	RD1	I/O	
108	RD0	I/O	
109	VSS		(Ground)
110	RD17	I/O	
111	RD16	I/O	
112	RD15	I/O	
113	RD14	I/O	
114	RD13	I/O	
115	RD12	I/O	
116	RD11	I/O	
117	RD10	I/O	
118	RD9	I/O	
119	RD8	I/O	
120	VDDS		(Power supply)

PIN NO.	NAME	I/O	FUNCTION
121	VSS		(Ground)
122	HMD0	I/O	Wave memory data bus (Upper data memory)
123	HMD1	I/O	
124	HMD2	I/O	
125	HMD3	I/O	
126	HMD4	I/O	
127	HMD5	I/O	
128	HMD6	I/O	
129	HMD7	I/O	
130	HMD8	I/O	
131	HMD9	I/O	
132	HMD10	I/O	
133	HMD11	I/O	
134	HMD12	I/O	
135	HMD13	I/O	
136	HMD14	I/O	
137	HMD15	I/O	
138	VSS		(Ground)
139	HMA0	O	Wave memory address bus (Upper 16 bits)
140	HMA1	O	
141	HMA2	O	
142	HMA3	O	
143	HMA4	O	
144	HMA5	O	
145	HMA6	O	
146	HMA7	O	
147	HMA8	O	
148	HMA9	O	
149	HMA10	O	
150	VSS		(Ground)
151	VDD		(Power supply)
152	HMA11	O	
153	HMA12	O	
154	HMA13	O	
155	HMA14	O	
156	HMA15	O	
157	HMA16	O	
158	HMA17	O	
159	HMA18	O	
160	HMA19	O	
161	HMA20	O	
162	HMA21	O	
163	HMA22	O	
164	HMA23	O	
165	HMA24	O	
166	VSS		(Ground)
167	/MRAS	O	RAS when DRAM(s) is connected to wave memory
168	/MCAS	O	CAS when DRAM(s) is connected to wave memory
169	/MOE	O	Wave memory output enable
170	/MWE	O	Wave memory write enable
171	VSS		(Ground)
172	LMD0	I/O	Wave memory data bus (Lower data memory)
173	LMD1	I/O	
174	LMD2	I/O	
175	LMD3	I/O	
176	LMD4	I/O	
177	LMD5	I/O	
178	LMD6	I/O	
179	LMD7	I/O	
180	VDDS		(Power supply)
181	VSS		(Ground)
182	LMD8	I/O	
183	LMD9	I/O	
184	LMD10	I/O	
185	LMD11	I/O	
186	LMD12	I/O	
187	LMD13	I/O	
188	LMD14	I/O	
189	LMD15	I/O	
190	VSS		(Ground)
191	LMA0	O	Wave memory address bus (Lower data memory)
192	LMA1	O	
193	LMA2	O	
194	LMA3	O	
195	LMA4	O	
196	LMA5	O	
197	LMA6	O	
198	LMA7	O	
199	LMA8	O	
200	LMA9	O	
201	LMA10	O	
202	LMA11	O	
203	VSS		(Ground)
204	LMA12	O	
205	LMA13	O	
206	LMA14	O	
207	LMA15	O	
208	LMA16	O	
209	LMA17	O	
210	VDD		(Power supply)
211	VSS		(Ground)
212	LMA18	O	
213	LMA19	O	
214	LMA20	O	
215	LMA21	O	
216	LMA22	O	
217	LMA23	O	
218	LMA24	O	
219	VSS		(Ground)
220	SYO	O	Sync. signal for master clock
221	SYOD	O	Sync. signal for HCLK/QCLK
222	QCLK	O	1/12 master clock (64 Fs)
223	HCLK	O	1/6 master clock (128 Fs)
224	CK256	O	1/3 master clock (256 Fs)
225	SYSCLK	O	1/2 master clock (384 Fs)
226	VDDS		(Power supply)
227	SYI	I	Sync. clock
228	MCLKI	I	Master clock input
229	MCLKO	O	Master clock output
230	VDD		(Power supply)
231	XIN	I	Crystal osc. input
232	XOUT	O	Crystal osc. output
233	VSS		(Ground)
234	/IC	I	Initial clear
235	CHIP2	I	2 chips mode enable
236	SLAVE	I	Master/Slave select when 2 chips mode
237	/TESTO	I	Test pin
238	/ACI	I	
239	DCTEST	I	
240	VDDS		(Power supply)

● YSS236-F (XT013A00) VOP3

PIN NO.	NAME	I/O	FUNCTION	PIN NO.	NAME	I/O	FUNCTION
1	VSS		Power supply	81	SO7	O	
2	WA17	O		82	SO6	O	Serial output
3	WA16	O		83	SO5	O	
4	WA15	O		84	VDD		Ground
5	WA14	O		85	VSS		Power supply
6	WA13	O	External memory address bus	86	SO4	O	
7	WA12	O		87	SO3	O	
8	WA11	O		88	SO2	O	Serial output
9	WA10	O		89	SO1	O	
10	VDD		Ground	90	SO0	O	
11	VSS		Power supply	91	WDCK	O	Data enable for DAC
12	WA09	O		92	SWPKON	O	SWP00 format key on output
13	WA08	O		93	IRQN	O	EG interrupt
14	WA07	O		94	VDD		Ground
15	WA06	O		95	VSS		Power supply
16	WA05	O	External memory address bus	96	XTAL_I	I	Quartz crystal terminal
17	WA04	O		97	XTAL_O	O	Quartz crystal terminal
18	WA03	O		98	MCLK	O	Oscillate clock output
19	WA02	O		99	VDD		Ground
20	VDD		Ground	100	VSS		Power supply
21	VSS		Power supply	101	MICN	I	Initial clear
22	WA01	O	External memory address bus	102	CLKIN	I	Master clock input
23	WA00	O		103	SYWIN	I	Sync.signal input
24	WEN	O	External memory control (WEN)	104	SYW	O	Sync.signal output
25	OEN	O	External memory control (OEN)	105	SYWD	O	Sync.signal output
26	RASN	O	External memory control (RASN)	106	VDD		Ground
27	CASN	O	External memory control (CASN)	107	VSS		Power supply
28	CEN	O	External memory control (CEN)	108	CLKO	O	For test (512 fs output)
29	VDD		Ground	109	WCLK	O	2 times sync.clock output (256 fs)
30	VSS		Power supply	110	HCLK	O	4 times sync.clock output (128 fs)
31	WD19	I/O		111	QCLK	O	8 times sync.clock output (64 fs)
32	WD18	I/O		112	TSTCI	I	PLL test input
33	WD17	I/O	External memory data bus	113	VDD		Ground
34	WD16	I/O		114	VSS		Power supply
35	WD15	I/O		115	(NC)		
36	WD14	I/O		116	VDD(PLL)		
37	VDD		Ground	117	CPO	O	PLL control output
38	VSS		Power supply	118	CPIN	I	PLL control input
39	WD13	I/O		119	REF	I	PLL control intput
40	WD12	I/O		120	VSS(PLL)		
41	WD11	I/O		121	(NC)		
42	WD10	I/O	External memory data bus	122	VDD		Ground
43	WD09	I/O		123	VSS		Power supply
44	WD08	I/O		124	TSTCS	I	PLL test input
45	WD07	I/O		125	CA6	I	
46	VDD		Ground	126	CA5	I	CPU address bus
47	VSS		Power supply	127	CA4	I	
48	WD06	I/O		128	CA3	I	
49	WD05	I/O		129	CA2	I	
50	WD04	I/O		130	VDD		Ground
51	WD03	I/O	External memory data bus	131	VSS		Power supply
52	WD02	I/O		132	CA1	I	CPU address bus
53	WD01	I/O		133	CA0	I	Lo/Hi select in 8 bits write
54	WD00	I/O		134	CSN	I	Chip select
55	VDD		Ground	135	RDN	I	Register read
56	VSS		Power supply	136	WRN	I	Register write
57	TST2	O		137	BTYP		Data bus type select
58	TST1	O	Test output	138	VDD		Ground
59	TST0	O		139	VSS		Power supply
60	MS	I	Memory select	140	CD15	I/O	
61	LRCLK	O	LR clock for ADC	141	CD14	I/O	
62	SI7	I	Serial input	142	CD13	I/O	CPU data bus
63	SI6	I		143	CD12	I/O	
64	VDD		Ground	144	CD11	I/O	
65	VSS		Power supply	145	VDD		Ground
66	SI5	I		146	VSS		Power supply
67	SI4	I		147	CD10	I/O	
68	SI3	I	Serial input	148	CD09	I/O	
69	SI2	I		149	CD08	I/O	CPU data bus
70	SI1	I		150	CD07	I/O	
71	SI0	I		151	CD06	I/O	
72	DB1	I	Output bit type select for DAC	152	CD05	I/O	
73	DB0	I		153	VDD		Ground
74	VDD		Ground	154	VSS		Power supply
75	VSS		Power supply	155	CD04	I/O	
76	ODFM	I	Output mode select for DAC	156	CD03	I/O	
77	OFS3	I		157	CD02	I/O	CPU data bus
78	OFS2	I	Serial output format select	158	CD01	I/O	
79	OFS1	I		159	CD00	I/O	
80	OFS0	I		160	VDD		Ground

● **HD63B05V0F073P** (XR951A00) **CPU**

PIN NO.	NAME	I/O	FUNCTION	PIN NO.	NAME	I/O	FUNCTION
1	/RES	I	Reset	21	C7	I/O	
2	/INT	I	Interrupt request	22	C6	I/O	
3	NUM	I	Non-maskable interrupt	23	C5	I/O	
4	A7	I/O		24	C4	I/O	Port C
5	A6	I/O		25	C3	I/O	
6	A5	I/O		26	C2	I/O	
7	A4	I/O	Port A	27	C1	I/O	
8	A3	I/O		28	C0	I/O	
9	A2	I/O		29	D0	I/O	
10	A1	I/O		30	D1	I/O	Port D
11	A0	I/O		31	D2	I/O	
12	B0	I/O		32	D3/TX	O	(Serial data output)
13	B1	I/O		33	D4/RX	I	(Serial data input)
14	B2	I/O		34	D5//CK	O	(Clock for serial operation)
15	B3	I/O	Port B	35	D6//INT2	I	(Interrupt request 2)
16	B4	I/O		36	/STBY	I	(Standby mode signal)
17	B5	I/O		37	TIMER	I	Timer
18	B6	I/O		38	XTAL	O	Clock
19	B7	I/O		39	EXTAL	I	
20	VSS		Ground	40	VCC		Power supply

● **AK5351-VF-E2** (XV510A00) **ADC** (Analog to Digital Converter)

PIN NO.	NAME	I/O	FUNCTION	PIN NO.	NAME	I/O	FUNCTION
1	AINR+	I	Analog signal input (R channel +)	13	DGND	-	Digital ground
2	AINR-	I	Analog signal input (R channel -)	14	TST4	I/O	Test mode setting 4
3	VREF	O	Reference voltage	15	AMODE2		Interface clock select 2
4	VA	-	Analog power supply	16	/PD	I	Power-down mode
5	AGND	-	Analog ground	17	MCLK	I	Master clock input
6	AINL+	I	Analog signal input (L channel +)	18	SCLK	I/O	Serial data clock
7	AINL-	I	Analog signal input (L channel -)	19	LRCK	I	Input/Output channel clock
8	TST1	I/O	Test mode setting 1	20	FSYNC	I/O	Frame synch. clock
9	HPFE		HPF on/off	21	SDATA	O	Serial data output
10	TST2	I/O	Test mode setting 2	22	CMODE	I	Master clock select
11	TST3	I/O	Test mode setting 3	23	SMODE1	I	Interface clock select 1
12	VD	-	Digital power supply	24	VB	-	Digital power supply

● **PCM1716E** (XU829A00) **DAC** (Digital to Analog Converter)

PIN NO.	NAME	I/O	FUNCTION	PIN NO.	NAME	I/O	FUNCTION
1	LRCK	I		15	Vcc1	-	Analog power supply (+5 V)
2	DATA	I	Data input	16	VOUTL	O	Lch, analog voltage output
3	BCK	I	Bit clock	17	NC	-	
4	CLKO	O	Clock input	18	EXTL	O	Lch, analog output
5	XTI	I	Clock input	19	AGND2L	-	Analog ground
6	XTO	O	Clock out	20	Vcc2L	-	Analog power supply (+5 V)
7	DGND	-	Digital ground	21	/ZERO	O	Zero data flag
8	VDD	-	Digital power supply (+5 V)	22	/RST	I	Reset
9	Vcc2R	-	Analog power supply (+5 V)	23	/CS/IWO	I	Chip select
10	AGND2R	-	Analog ground	24	MODE	I	Mode control select (H: Software, L: Hardware)
11	EXTR	O	Rch, analog output	25	/MUTE	I	Mute control
12	NC	-		26	MD/DM0	I	Mode control data/ De-emphasis select1
13	VOUTR	O	Rch, analog voltage output	27	MC/DM1	I	Mode control BCK/De-emphasis select2
14	AGND1	-	Analog ground	28	ML/IIS	I	Mode control Latch/input format select

● **HD63266F** (XI939A00) **FDC** (Floppy Disk Controller)

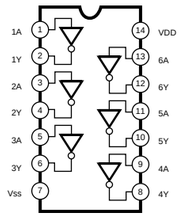
PIN NO.	NAME	I/O	FUNCTION	PIN NO.	NAME	I/O	FUNCTION
1	8"//5"	I	Data transmission speed	33	/TRKO	I	Track 00 signal
2	XTALSET	I	Clock select	34	/INDEX	I	Index signal
3	/RESET	I	Rest	35	/RDATA	I	Read data input from FDD
4	E//RD	I	Enable/Read	36	XTAL2		Clock
5	RW//WR	I	Read/write/Write	37	EXTAL2		
6	/CS	I	Chip select	38	NC		
7	/DACK	I	DMA acknowledge	39	XTAL1		Clock
8	RS0	I	Register select	40	EXTAL1		
9	RS1	I		41	VSS4		Ground
10	VSS1		Ground	42	VSS5		
11	VSS2			43	NC		
12	D0	I/O	Data bus	44	VCC2		Power supply
13	D1	I/O		45	VCC3		
14	D2	I/O		46	VCC4		
15	D3	I/O		47	/WGATE	O	Write control
16	D4	I/O		48	/WDATA	O	Writ data to FDD
17	D5	I/O		49	VSS6		Ground
18	D6	I/O		50	/STEP	O	Step signal to control head of FDD
19	D7	I/O		51	/HDIR	O	Direction
20	/DREQ	O	DMA request	52	/HLOAD	O	Head load
21	/IRQ	O	Interrupt request	53	/HSEL	O	Head select
22	/DEND	I	Data end	54	VSS7		Ground
23	VSS3		Ground	55	/DS0	O	Drive select
24	1/2 EX1			56	/DS1	O	
25	VCC1		Power supply	57	/DS2	O	
26	NUM1	I		58	/DS3	O	
27	NUM3	I		59	VSS8		Ground
28	IFS	I	Host interface select	60	/MON0	O	Motor on
29	SFORM	I	Format data	61	/MON1	O	
30	/INP	I	Index pulse	62	/MON2	O	
31	/READY	I	Ready from FDD	63	/MON3	O	
32	/WPRT	I	Write control signal	64	VSS9		Ground

● **SED1335F0B** (XQ595A00) **LCDC** (LCD Controller)

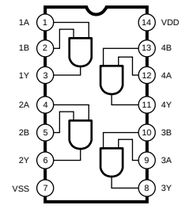
PIN NO.	NAME	I/O	FUNCTION	PIN NO.	NAME	I/O	FUNCTION
1	VA5	O	VRAM address bus	31	XD2	O	Data bus output for 4 bit dot
2	VA4	O		32	XD1	O	
3	VA3	O		33	XD0	O	
4	VA2	O		34	XECL	O	S driver enable, chain clock
5	VA1	O		35	XSCL	O	Data bus shift clock
6	VA0	O		36	Vss	-	Ground
7	/VWR	O	VRAM read/write	37	LP	O	X driver latch pulse
8	/VCE	O	Memory control	38	WF	O	Frame signal for X/Y driver
9	/VRD	-	Not used	39	YDIS	O	Power down signal for displaying off mode
10	/RES	I	Initial clear	40	YD	O	Scan start signal
11	NC	-	Not used	41	YSCL	O	Scan shift clock
12	NC	-	Not used	42	VD7	I/O	VRAM data bus
13	/RD	I	Read strobe	43	VD6	I/O	
14	/WR	I	Write strobe	44	VD5	I/O	
15	SEL2	I	Bus select	45	VD4	I/O	
16	SEL1	I	Bus select	46	VD3	I/O	
17	OSC1	I	Clock	47	VD2	I/O	
18	OSC2	O	Clock	48	VD1	I/O	
19	/CS	I	Chip select	49	VD0	I/O	
20	A0	I	Data mode select	50	VA15	O	VRAM address bus
21	Vdd	-	Power supply	51	VA14	O	
22	D0	I/O	Data bus	52	VA13	O	
23	D1	I/O		53	VA12	O	
24	D2	I/O		54	VA11	O	
25	D3	I/O		55	VA10	O	
26	D4	I/O		56	VA9	O	
27	D5	I/O		57	VA8	O	
28	D6	I/O		58	VA7	O	
29	D7	I/O		59	VA6	O	
30	XD3	O	Data bus output for 4 bit dot	60	NC	-	Not used

■ IC BLOCK DIAGRAM

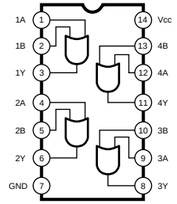
● **SN74HCU04NSR** (XC723A00)
SN74HCU04N (IG142250)
Hex Inverter
DM: IC10,16(PSR-740) IC420(PSR-640)
JACK: IC02



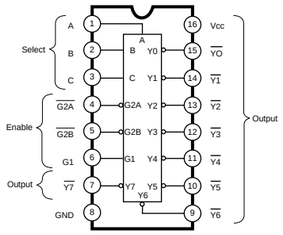
● **SN74HC08NSR** (XD831A00)
HD74LVC08FP (XU720A00)
Quad 2 Input AND
DM: IC15(PSR-740) IC370(PSR-640)



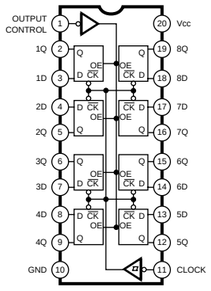
● **TC74HC32AF** (XN241A00)
Quad 2 Input OR
DM: IC14(PSR-740) IC360(PSR-640)



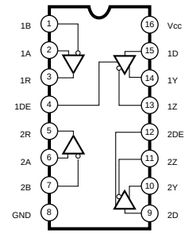
● **TC74HC138AF** (XM970A00)
TC74HC138AFEL (XW762A00)
3 to 8 Demultiplexer
DM: IC13,19(PSR-740) IC350,510(PSR-640)



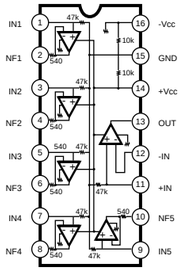
● **SN74HC374ANSR** (XQ042A00)
Octal 3-State D-Type Flip-Flop
DM: IC18,20(PSR-740) IC430,500(PSR-640)



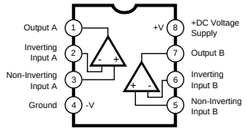
● **SN75C1168N** (XU463A00)
Line Driver / Receiver
JACK: IC01



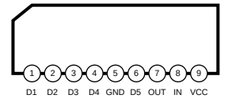
● **M5227P** (XF751A00)
5-Band Graphic Equalizer
AM: IC210,220



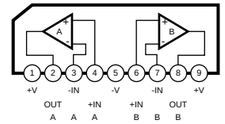
● **M5223AFP** (XV117A00)
M5223AL (XW373A00)
Dual Operational Amplifier
DM: IC33(PSR-740)
MIC: IC100(PSR-740)



● **LB1443N** (XF483A00)
LED Driver
MIC: IC001(PSR-740)

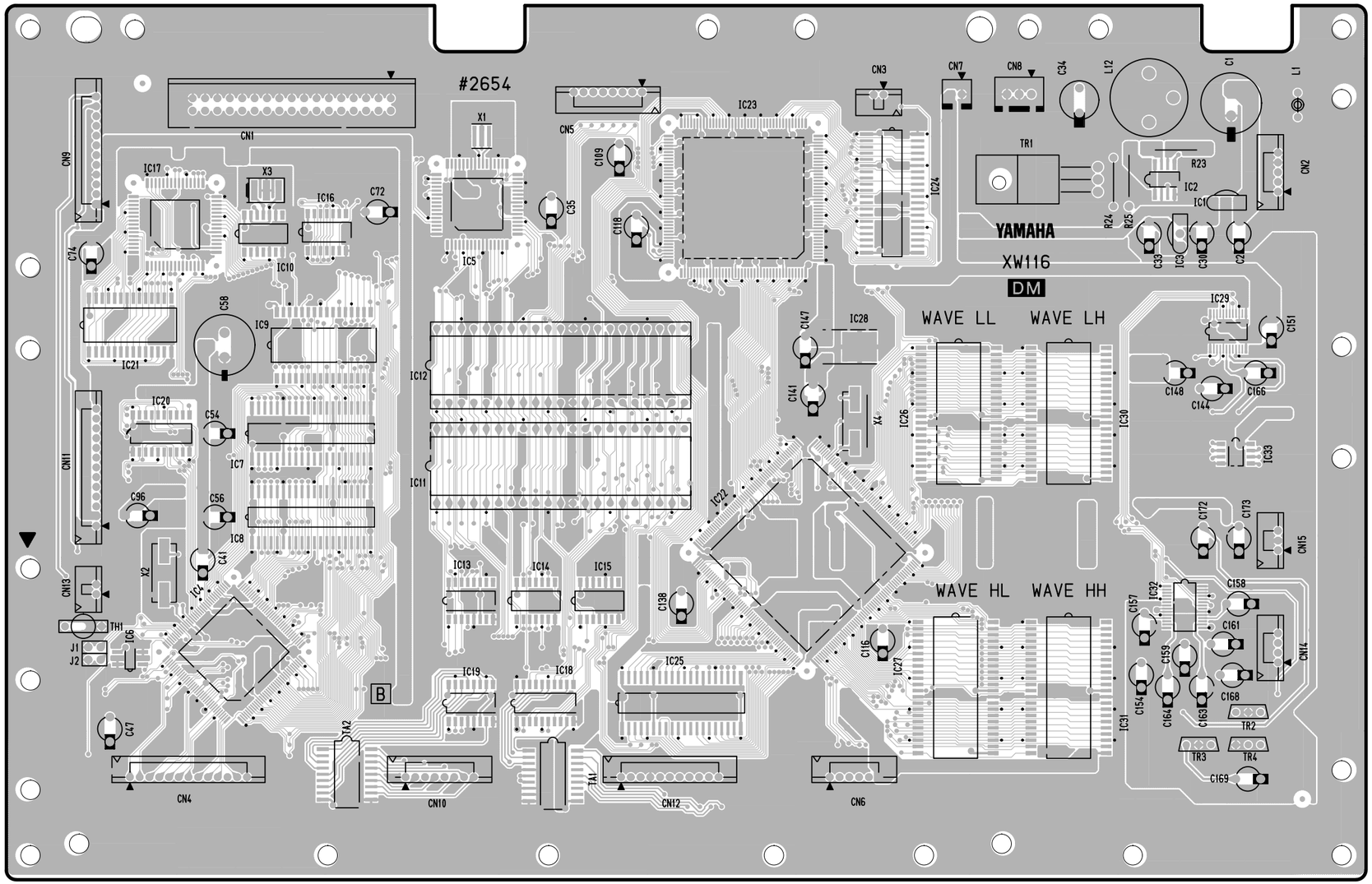


● **μPC4570HA** (XB247A00)
Dual Operational Amplifier
AM: IC320,510



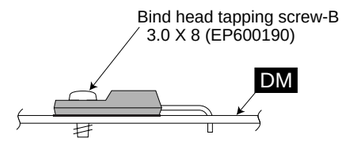
■ CIRCUIT BOARDS

• DM Circuit Board (PSR-740)



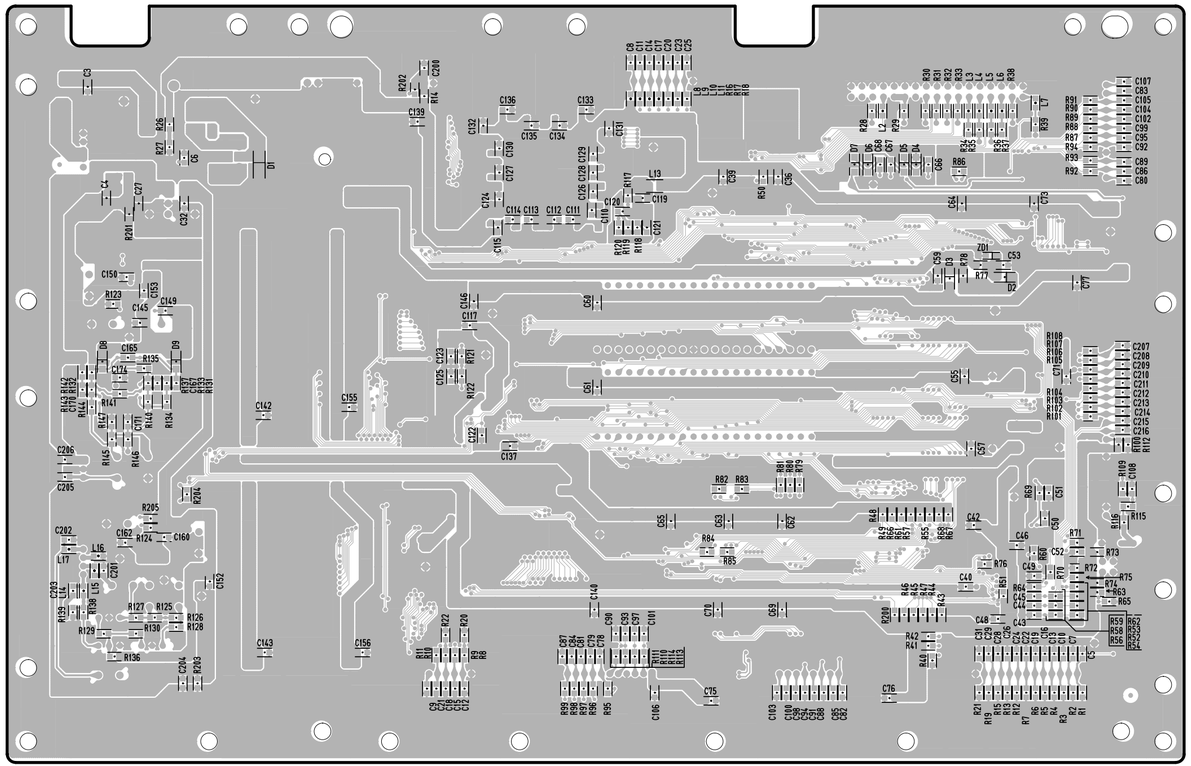
Component side

• TR1 installation



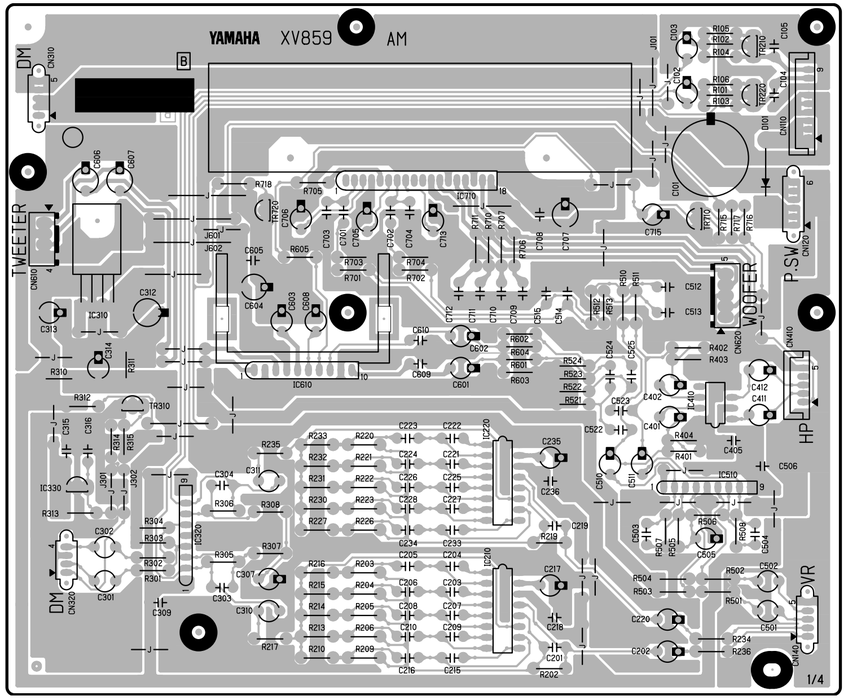
Note: See parts list for details of circuit board component parts.

• DM Circuit Board 〈PSR-740〉



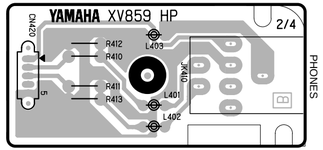
Pattern side

• AM (AM) Circuit Board



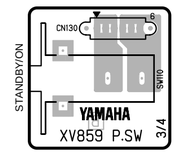
Component side

• AM (HP) Circuit Board



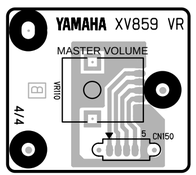
Component side

• AM (PSW) Circuit Board



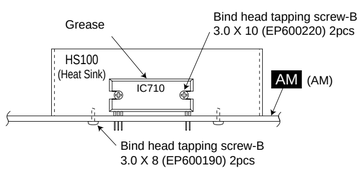
Component side

• AM (VR) Circuit Board

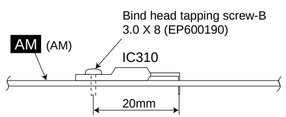


Component side

• IC710 Installation

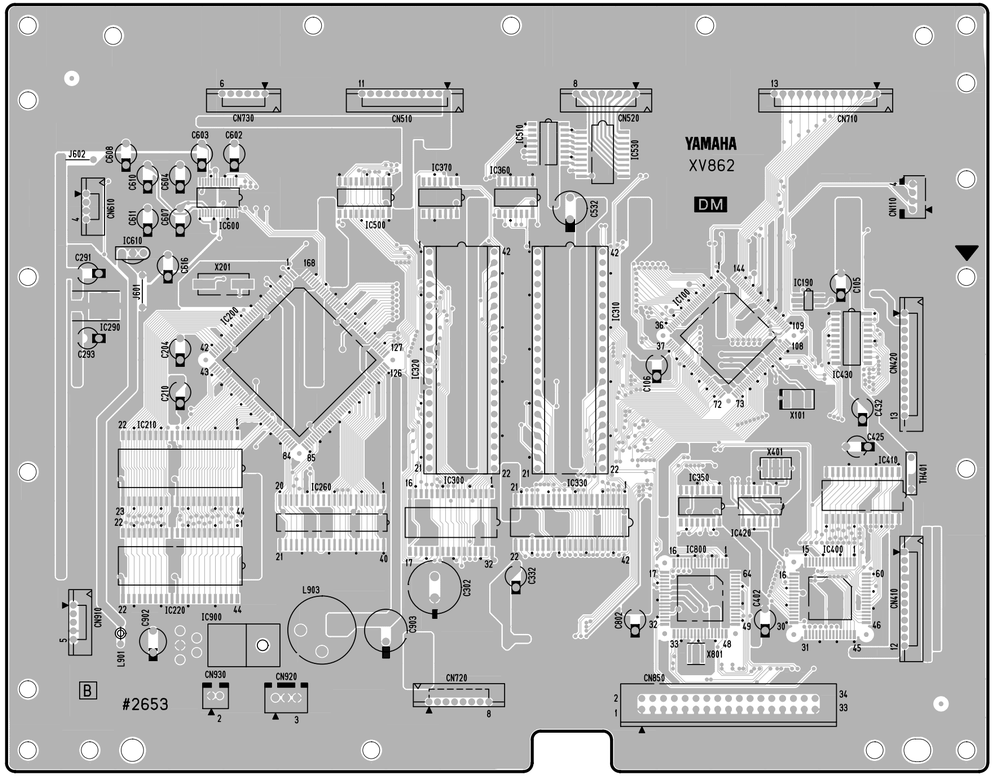


• IC310 Installation

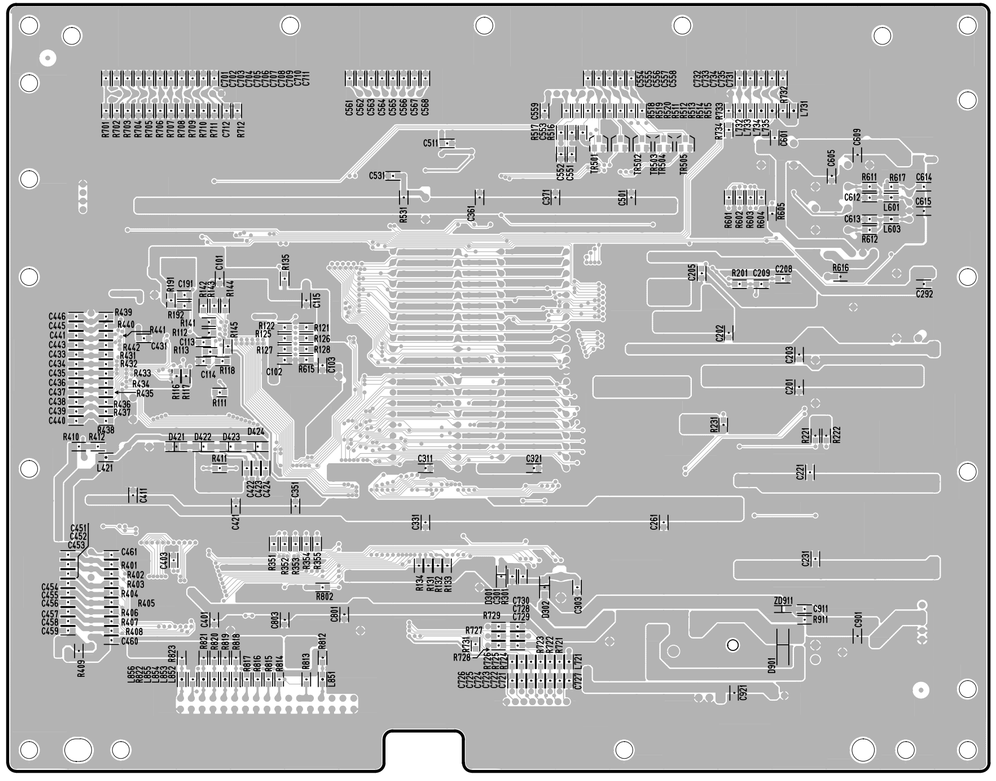


DM: 2NA-V320040-1 ⓪
AM: 2NA-V350500 ⓪

• **DM Circuit Board**〈PSR-640〉

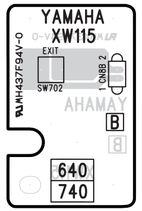


Component side



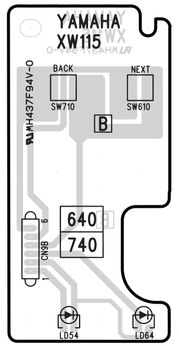
Pattern side

• PN (PN2) Circuit Board



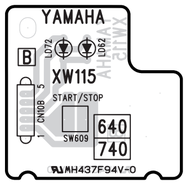
Component side

• PN (PN3) Circuit Board



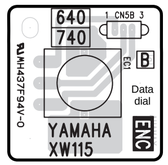
Component side

• PN (PN4) Circuit Board



Component side

• PN (ENC) Circuit Board



Component side

• PN (PN1) Circuit Board

Component side

• PN (WH1) Circuit Board 〈PSR-640〉

PITCH BEND

Component side

• PN (WH2) Circuit Board 〈PSR-740〉

MODULATION

Component side

• PN (WH3) Circuit Board 〈PSR-740〉

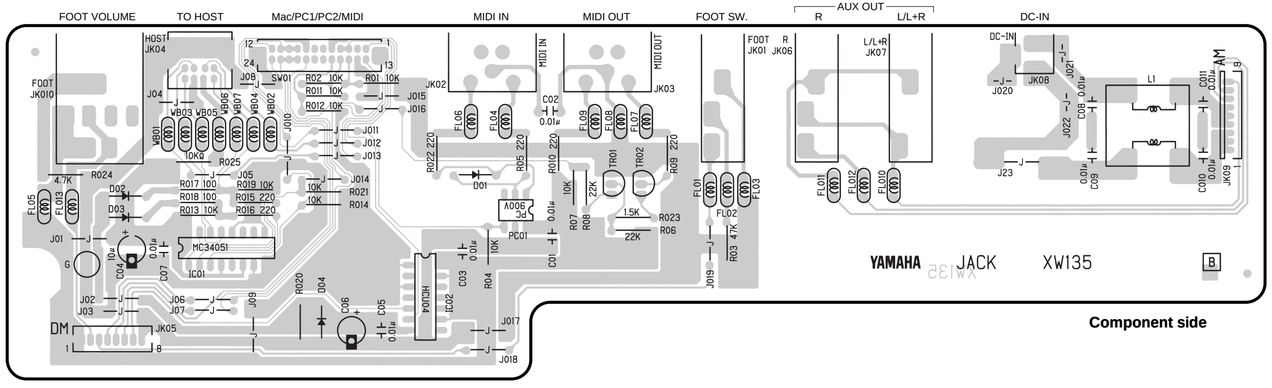
PITCH BEND

Component side

* [ ] : PSR-740 only

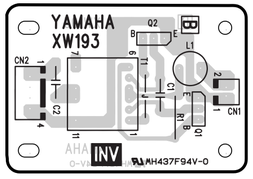
Component side

• JACK Circuit Board



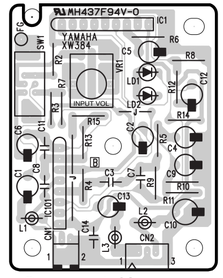
Component side

• INV Circuit Board



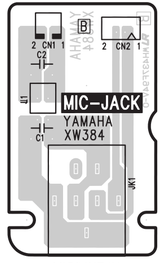
Component side

• MIC Circuit Board
〈PSR-740 only〉



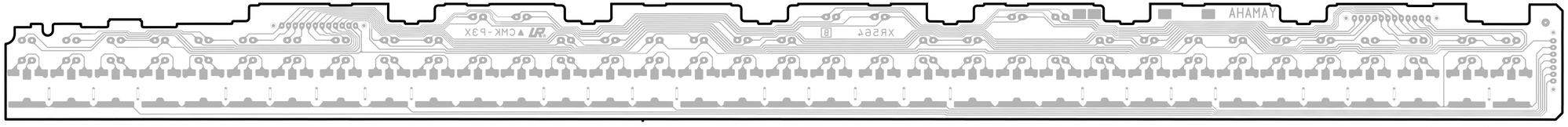
Component side

• MIC-JACK Circuit Board
〈PSR-740 only〉



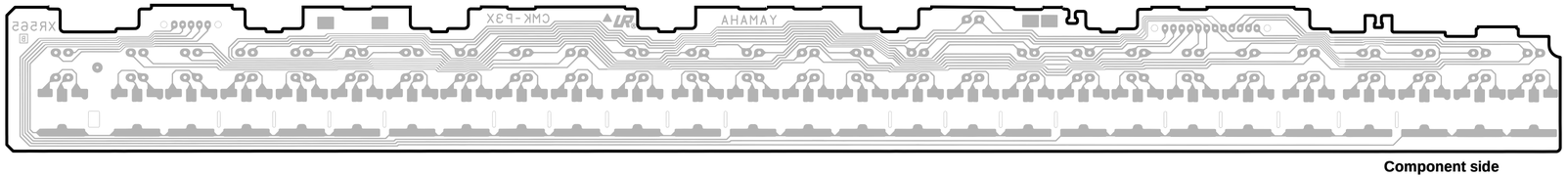
Component side

• MK-L Circuit Board



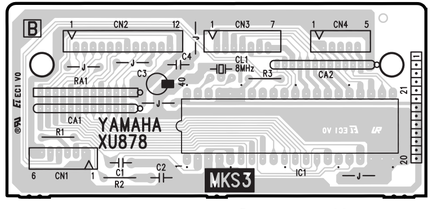
Component side

• MK-H Circuit Board



Component side

• MKS3 Circuit Board



Component side

JACK: 2NA-V463930
INV: 2NA-V420050
MIC,MIC-JACK: 2NA-V420190

TEST PROGRAM

A. PREPARATION

1) PA-6 (AC adaptor) is used.
2) The volume is usually moved to the use position when no volume change is required.
3) Measuring instruments: frequency counter, level meter (with JIS-C filter)
   Note: Connect a stereo plug to the [PHONES] jack at 33 ohms.
4) Jigs: foot switch, MIDI cable, floppy disk (2HD & 2DD)

B. HOW TO ENTER THE TEST PROGRAM

AUTO MODE

While pressing the C3#, F3 and G3# keys, turn the [STANDBY/ON] switch on.

MANUAL MODE

While pressing the C2#, F2 and G2# keys, turn the [STANDBY/ON] switch on.

C. PROCEEDING THROUGH THE TEST PROGRAM

AUTO MODE

When the test program is started, the test is automatically executed.

When confirmation is necessary, the test program stops operating and waits for the instruction. At this time, press the [START/STOP] button; the next test is automatically executed.

MANUAL MODE

The LCD will display "TEST" when entering the test program.

To select the program number, use the [BACK] and [NEXT] buttons.

To execute the test, press the [START/STOP] button.

To proceed to the next test, press the [START/STOP] button.

D. TEST PROGRAM LIST

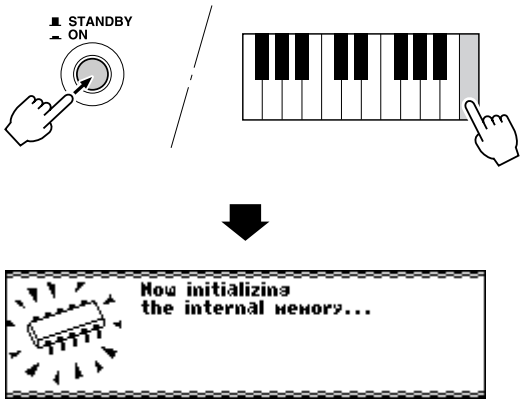
TEST NO.	LCD (initial)	Test Functions and Judgment Criteria
1	001: Version	Displays ROM version ROM (Program, Wave) versions are displayed alternately on the LCD.
2	002: Rom Chk1	Checks the ROM The test results appear on the LCD.
3	003: Ram Chk1	Checks all the RAMs that are connected to the CPU The test results appear on the LCD.
4	004: WaveRomChk1	Checks the WAVE ROMs that are connected to the CPU The test results appear on the LCD.
7	007: FDD Chk	Insert the floppy disks one by one (2DD and 2HD). Checks the floppy disk drive unit
9	009: Eff1Ram Chk	Checks the effect RAM1
10	010: Eff2Ram Chk (PSR-740 only)	Checks the effect RAM2
11	011: TG1 Chk	Outputs the sine wave by changing the channels in sequence from C1 to C6 After auto-scaling is finished, individual keys can be played. (If playing two or more keys simultaneously, the first pressed key has priority to make a sound.)
13	013: Pitch Chk	Connect the frequency counter to the [PHONES] jack. Sets PAN to Center and produces a signal at 440 +/- 0.22 Hz Check that the correct signal is produced.
14	014: Output R	Connect the level meter (with a JIS-C filter) to the [PHONES] jack. (33 ohm load) Set the [MASTER VOLUME] at maximum and check the output level (1 kHz). PHONES L: less than -50.0 dBm PHONES R: -8.0 dBm +/- 2 dB Connect the monaural plugs of the level meter (with a JIS-C filter) to the [AUX OUT] jacks. AUX OUT L: less than -50.0 dBm AUX OUT R: -6.0 dBm +/- 2 dB

15	015: Output L	Connect the level meter (with a JIS-C filter) to the [PHONES] jack. (33 ohm load) Set the [MASTER VOLUME] at maximum and check the output level (1 kHz). PHONES L: -8.0 dBm +/- 2 dB PHONES R: less than -50.0 dBm Connect the monaural plugs of the level meter (with a JIS-C filter) to the [AUX OUT] jacks. AUX OUT L: -6.0 dBm +/- 2 dB AUX OUT R: less than –50.0 dBm
19	019: D/A Noise	Connect the level meter (with a JIS-C filter) to the [PHONES] jack. (33 ohm load) Set the [MASTER VOLUME] at maximum. Check D/A converter noise. PHONES L/R: Less than -72.0 dBm (PSR-740), Less than -80.0 dBm (PSR-640)
20	020: SW,LED Chk	Check the switches on the panel. Press the switches that are displayed on the LCD. A pre-assigned note is output when pressing the switch. (With some switches, the corresponding LED will light up.) The test results appear on the LCD.
21	021: All LED On	Check that the all LEDs on the panel are on.
22	022: Red LED On	Check that the all red LEDs on the panel are on.
23	023: GreenLED on	Check that the all green LEDs on the panel are on.
28	028: All LCD On	Check that all LCD dots are on. The LCD becomes black.
29	029: All LCD Off	Check that all LCD dots are off. The LCD becomes white.
31	031: Pedal1 Chk	Connect the foot switch (FC-4 or FC-5) to the [FOOT SWITCH] jack. Check that the C3 note is output when pressing and releasing the pedal and the C4 note is output when pressing the pedal again.
33	033: PB Chk	Check that the C3 note is output when rotating the [PITCH BEND] wheel to minimum and the C4 note is output when rotating it to maximum.
34	034: MOD Chk	Check that the C3 note is output when rotating the [MODULATION] wheel to minimum and the C4 note is output when rotating it to maximum.
35	035: EXP Pedal Chk	Connect the expression pedal (FC-7) to the [FOOT VOLUME] jack. Check that the C3 note is output and the LCD displays 0 when pressing the expression pedal to the lowered position and the C4 note is output and the LCD displays 127 when backing it to the raised position.
37	037: Midi Chk	After connecting the [MIDI IN] jack and [MIDI OUT] jack with a MIDI cable, execute the test. Set the [HOST SELECT] switch to MIDI Check that the C4 note is output and that the test results appear on the LCD.
38	038: To Host Chk	For factory test use only
39	039: MIC Chk (PSR-740 only)	Connect a microphone to the [MIC/LINE IN] jack and speak to it. Set the [MIC/LINE] select switch to MIC and set the [INPUT VOLUME] at maximum. Check that the voice is converted to the 1-octave- upper tone without noise.
41	041: Rom Chk2	Checks the ROMs that are connected to the CPU. The test results appear on the LCD.
42	042: Ram Chk2	Checks the RAMs that are connected to the CPU. The test results appear on the LCD.
43	043: WaveRomChk2	Checks the WAVE ROM. The test results appear on the LCD.
46	046: BackUp Chk2	Performs the RAM back-up check. Check that the display reads “NG,” then turn off the power switch. Enter the test program and perform the RAM back-up checks, then check again. Check that the LCD displays “OK.” Note: Do not turn on the power switch by normal mode while standing by, as the RAM data will be lost.
47	047: Factory Set	All the RAMs are initialized and set to the factory preset data when executing this test. The results appear on the LCD.
48	048: Test Exit	Exit from the test program after executing this test.

* NOTE: The above tests **Nos. 41-46**, require approximately 25 minutes to conduct.
If the time is not available to perform the tests, proceed the test No.47 by pressing several the [NEXT] button.

DATA INITIALIZATION

All data can be initialized and restored to the factory preset condition by turning on the power while holding the highest (rightmost) white key on the keyboard. "Now initializing the internal memory..." will appear briefly on the display.



⚠ *CAUTION*

- ***All registration and User Style/Pad memory data, plus the other settings listed above, will be erased and/or changed when the data initialization procedure is carried out.***
- ***Carrying out the data initialization procedure will usually restore normal operation if the PSR-740/640 freezes or begins to act erratically for any reason.***

ALERT MESSAGE LIST

No file on disk! **Insert another disk.**	The disk contains no file to be loaded, copied, or be deleted. Insert the disk that contains files to be loaded, copied, or deleted.
Unformatted disk!	An unformatted disk is inserted.
Disk error!	An error occurred during execution of a disk operation. Try changing the disk. This message also may appear when executing the Load operation if the internal memory becomes full.
Disk write-protected!	The floppy disk's write-protect tab is set to ON. Remove the disk, set write-protect to off, re-insert the disk and attempt the operation again.
Disk file protected! **Can't copy or record** **this file.**	The file is a purposely "copy-protected" disk. The Copy function is not possible.
No disk! **Insert a disk.**	There is no floppy disk inserted into the disk drive. Insert a disk.
Disk removed!	An error occured because the disk was removed during a disk operation. Never remove a disk during a disk operation since this could damage both the disk and the drive.
Disk full! **Cannot continue.**	The disk's memory capacity is full and no additional data can be recorded. Delete one or more unneeded songs (using Delete), and attempt the operation again.
Wrong disk! **Reinsert** **the proper disk.**	When using the Copy operation, the inserted disk is different from the source or destination disk. Remove the disk and re-insert the proper Disk.
Same name on disk! **Change the file name.**	More than one file has the same name on the disk. Change the name.
Cannot record! **Maximum of 60 songs** **can be recorded.**	Maximum of 60 songs can be recorded. Delete one or more unneeded songs (using Delete), and attempt the song recording again.
Memory full! **Cannot continue.**	If the internal memory becomes full during Style/Pad recording, this message will appear on the display and recording will stop.

Memory full! **Clear unnecessary data.**	This message appears when executing the Quantize or Recording operations (in the Style Recording mode) when the internal memory is full.
Data not found!	This message appears when you attempt to edit, quantize or clear the track which contains no data in the Record mode.
User style full!	This message indicates that recording a new User style cannot be started when all three User styles have recorded data. Make sure to clear at least one of the three User styles before recording a new User style.
Cannot quantize the preset data.	This message appears when you attempt to edit or quantize the track (other than RHYTHM) which contains preset data in the Style Record mode.
Cannot operate during recording.	This function cannot be used during Song/Style/Pad recording.
Cannot set the MIDI function during disk operations, etc.	The MIDI function cannot be set during recording, playback, and disk operations.
Cannot turn harmony ON during Style/Pad recording.	Harmony cannot be turned on during Style/Pad recording.
Cannot turn DSP ON during Style/Pad recording.	DSP cannot be turned on during Style/Pad recording.
Cannot enter the functions during Pad recording.	This message appears to indicate you cannot enter the function when you select Multi Pad function in the Multi Pad Recording mode.
Backup error!	The backup data is faulty. Use the data initialization function.
Now initializing the internal memory...	All data can be initialized and restore to the factory preset condition by turning the STANDBY switch ON while holding the highest (rightmost) white key on the keyboard.
Host is offline!	This message may appear when the Host Select switch is set appropriately and the serial cable is connected to the TO HOST but not to the PC's serial port (or the cable is properly connected to the PC which is currently turned off).

MIDI DATA FORMAT

Many MIDI messages listed in the MIDI Data Format are expressed in decimal numbers, binary numbers and hexadecimal numbers.
Hexadecimal numbers may include the letter “H” as a suffix. Also, “n” can freely be defined as any whole number.
To enter data/values, refer to the table below.

Decimal	Hexadecimal	Binary	Decimal	Hexadecimal	Binary
0	00	0000 0000	64	40	0100 0000
1	01	0000 0001	65	41	0100 0001
2	02	0000 0010	66	42	0100 0010
3	03	0000 0011	67	43	0100 0011
4	04	0000 0100	68	44	0100 0100
5	05	0000 0101	69	45	0100 0101
6	06	0000 0110	70	46	0100 0110
7	07	0000 0111	71	47	0100 0111
8	08	0000 1000	72	48	0100 1000
9	09	0000 1001	73	49	0100 1001
10	0A	0000 1010	74	4A	0100 1010
11	0B	0000 1011	75	4B	0100 1011
12	0C	0000 1100	76	4C	0100 1100
13	0D	0000 1101	77	4D	0100 1101
14	0E	0000 1110	78	4E	0100 1110
15	0F	0000 1111	79	4F	0100 1111
16	10	0001 0000	80	50	0101 0000
17	11	0001 0001	81	51	0101 0001
18	12	0001 0010	82	52	0101 0010
19	13	0001 0011	83	53	0101 0011
20	14	0001 0100	84	54	0101 0100
21	15	0001 0101	85	55	0101 0101
22	16	0001 0110	86	56	0101 0110
23	17	0001 0111	87	57	0101 0111
24	18	0001 1000	88	58	0101 1000
25	19	0001 1001	89	59	0101 1001
26	1A	0001 1010	90	5A	0101 1010
27	1B	0001 1011	91	5B	0101 1011
28	1C	0001 1100	92	5C	0101 1100
29	1D	0001 1101	93	5D	0101 1101
30	1E	0001 1110	94	5E	0101 1110
31	1F	0001 1111	95	5F	0101 1111
32	20	0010 0000	96	60	0110 0000
33	21	0010 0001	97	61	0110 0001
34	22	0010 0010	98	62	0110 0010
35	23	0010 0011	99	63	0110 0011
36	24	0010 0100	100	64	0110 0100
37	25	0010 0101	101	65	0110 0101
38	26	0010 0110	102	66	0110 0110
39	27	0010 0111	103	67	0110 0111
40	28	0010 1000	104	68	0110 1000
41	29	0010 1001	105	69	0110 1001
42	2A	0010 1010	106	6A	0110 1010
43	2B	0010 1011	107	6B	0110 1011
44	2C	0010 1100	108	6C	0110 1100
45	2D	0010 1101	109	6D	0110 1101
46	2E	0010 1110	110	6E	0110 1110
47	2F	0010 1111	111	6F	0110 1111
48	30	0011 0000	112	70	0111 0000
49	31	0011 0001	113	71	0111 0001
50	32	0011 0010	114	72	0111 0010
51	33	0011 0011	115	73	0111 0011
52	34	0011 0100	116	74	0111 0100
53	35	0011 0101	117	75	0111 0101
54	36	0011 0110	118	76	0111 0110
55	37	0011 0111	119	77	0111 0111
56	38	0011 1000	120	78	0111 1000
57	39	0011 1001	121	79	0111 1001
58	3A	0011 1010	122	7A	0111 1010
59	3B	0011 1011	123	7B	0111 1011
60	3C	0011 1100	124	7C	0111 1100
61	3D	0011 1101	125	7D	0111 1101
62	3E	0011 1110	126	7E	0111 1110
63	3F	0011 1111	127	7F	0111 1111

- Except the table above, for example 144-159(decimal)/9nH/1001 0000-1001 1111(binary) displays the Note On Message for each channel (1-16).
  176-191/BnH/1011 0000-1011 1111 displays the Control Change Message for each channel (1-16).
  192-207/CnH/1100 0000-1100 1111 displays the Program Change Message for each channel (1-16).
  240/FOH/1111 0000 denotes the start of a System Exclusive Message.
  247/F7H/1111 0111 denotes the end of a System Exclusive Message.
- aaH (hexidecimal)/0aaaaaaa (binary) denotes the data address. The address contains High, Mid, and Low.
- aaH (hexidecimal)/0aaaaaaa (binary) denotes the data address. The address contains High, Mid, and Low.
- bbH/0bbbbbbb denotes the byte count.
- ccH/0ccccccc denotes the check sum.
- ddH/0ddddddd denotes the data/value.

(1) TRANSMIT FLOW

MIDI OUT

- NOTE ON/OFF — 9nH
- CONTROL CHANGE — BnH
  - BANK SELECT MSB — BnH,00H
  - BANK SELECT LSB — BnH,20H
  - DATA ENTRY MSB — BnH,06H
  - DATA ENTRY LSB — BnH,26H
  - MUDULATION — BnH,01H (PSR-740 ONLY)
  - MAIN VOLUME — BnH,07H
  - PANPOT — BnH,0AH
  - EXPRESSION — BnH,0BH
  - SUSTAIN — BnH,40H
  - SOSTENUTE — BnH,42H
  - SOFT PEDAL — BnH,43H
  - HARMONIC CONTENT — BnH,47H (PSR-740 ONLY)
  - RELEASE TIME — BnH,48H
  - BRIGHTNESS — BnH,4AH (PSR-740 ONLY)
  - REVERB SEND LEVEL — BnH,5BH
  - CHORUS SEND LEVEL — BnH,5DH
  - VARIATION SEND LEVEL — BnH,5EH
  - NRPN LSB — BnH,62H (PSR-740 ONLY)
  - NRPN MSB — BnH,63H (PSR-740 ONLY)
    - VIBRATO RATE — BnH,63H,01H,62H,08H,06H,mmH
    - VIBRATO RATE DEPTH — BnH,63H,01H,62H,09H,06H,mmH
  - RPN LSB — BnH,64H
  - RPN MSB — BnH,65H
    - PITCH BEND SENS. — BnH,65H,00H,64H,00H,06H,mmH
- PROGRAM CHANGE — CnH
- PITCH BEND CHANGE — EnH

- SYSTEM EXCLUSIVE MESSAGE
  - <YAMAHA MIDI FORMAT>
  - <UNIVERSAL>
- UNIVERSAL NON-REALTIME — F0H 7EH.....F7H
  - <XG STANDARD>
- XG PARAMETER CHANGE — F0H 43H 1nH 4CH aaH aaH aaH ddH.....ddH F7H
- XG BULK DUMP — F0H 43H 0nH 4CH bbH bbH aaH aaH aaH ddH.....ddH ccH F7H
- SPECIAL OPERATORS

- SYSTEM REALTIME MESSAGE
  - MIDI CLOCK — F8H
  - START — FAH
  - STOP — FCH
  - ACTIVE SENSING — FEH

(2) RECEIVE FLOW

MIDI IN

- NOTE OFF — 8nH
- NOTE ON/OFF — 9nH
- CONTROL CHANGE
  - BANK SELECT MSB — BnH,00H
  - BANK SELECT LSB — BnH,20H
  - MODULATION — BnH,01H
  - PORTAMENTO TIME — BnH,05H
  - DATA ENTRY MSB — BnH,06H
  - DATA ENTRY LSB — BnH,26H
  - MAIN VOLUME — BnH,07H
  - PANPOT — BnH,0AH
  - EXPRESSION — BnH,0BH
  - SUSTAIN — BnH,40H
  - PORTAMENTO — BnH,41H
  - SOSTENUTO — BnH,42H
  - SOFT PEDAL — BnH,43H
  - HARMONIC CONTENT — BnH,47H
  - RELEASE TIME — BnH,48H
  - ATTACK TIME — BnH,49H
  - BRIGHTNESS — BnH,4AH
  - PORTAMENTO CONTROL — BnH,54H
  - REVERB SEND LEVEL — BnH,5BH
  - CHORUS SEND LEVEL — BnH,5DH
  - VARIATION SEND LEVEL — BnH,5EH
  - DATA INCREMENT — BnH,60H
  - DATA DECREMENT — BnH,61H
  - NRPN LSB — BnH,62H
  - NRPN MSB — BnH,63H
    - VIBRATO RATE — BnH,63H,01H,62H,08H,06H,mmH
    - VIBRATO DEPTH — BnH,63H,01H,62H,09H,06H,mmH
    - VIBRATO DELAY — BnH,63H,01H,62H,0AH,06H,mmH
    - FILTER CUTOFF FREQ. — BnH,63H,01H,62H,20H,06H,mmH
    - FILTER RESONANCE — BnH,63H,01H,62H,21H,06H,mmH
    - EQ BASS — BnH,63H,01H,62H,30H,06H,mmH (PSR-740 ONLY)
    - EQ TREBLE — BnH,63H,01H,62H,31H,06H,mmH (PSR-740 ONLY)
    - EQ BASS FREQ — BnH,63H,01H,62H,34H,06H,mmH (PSR-740 ONLY)
    - EQ TREBLE FREQ — BnH,63H,01H,62H,35H,06H,mmH (PSR-740 ONLY)
    - AEG ATTACK TIME — BnH,63H,01H,62H,63H,06H,mmH
    - AEG DECAY TIME — BnH,63H,01H,62H,64H,06H,mmH
    - AEG RELEASE — BnH,63H,01H,62H,66H,06H,mmH
    - DRUM INST
      - CUTOFF FREQ. — BnH,63H,14H,62H,rrH,06H,mmH
      - FILTER RESONANCE — BnH,63H,15H,62H,rrH,06H,mmH
      - AEG ATTACK RATE — BnH,63H,16H,62H,rrH,06H,mmH
      - AEG DECAY RATE — BnH,63H,17H,62H,rrH,06H,mmH
      - PITCH COARSE — BnH,63H,18H,62H,rrH,06H,mmH
      - PITCH FINE — BnH,63H,19H,62H,rrH,06H,mmH
      - LEVEL — BnH,63H,1AH,62H,rrH,06H,mmH
      - PANPOT — BnH,63H,1CH,62H,rrH,06H,mmH
      - REVERB SEND — BnH,63H,1DH,62H,rrH,06H,mmH
      - CHORUS SEND — BnH,63H,1EH,62H,rrH,06H,mmH
      - VARIATION SEND — BnH,63H,1FH,62H,rrH,06H,mmH

```
                VOCAL HARMONY
                    HARMONY MUTE            BnH,63H,00H,62H,01H,06H,mmH
                                                                (PSR-740 ONLY)
                    DETUNE MODULATION       BnH,63H,01H,62H,1AH,06H,mmH
                                                                (PSR-740 ONLY)
                    HARMONY1 VOLUME         BnH,63H,02H,62H,10H,06H,mmH
                                                                (PSR-740 ONLY)
                    HARMONY2 VOLUME         BnH,63H,02H,62H,11H,06H,mmH
                                                                (PSR-740 ONLY)
                    HARMONY1 PAN            BnH,63H,02H,62H,20H,06H,mmH
                                                                (PSR-740 ONLY)
                    HARMONY2 PAN            BnH,63H,02H,62H,21H,06H,mmH
                                                                (PSR-740 ONLY)
                    HARMONY1 DETUNE         BnH,63H,02H,62H,30H,06H,mmH
                                                                (PSR-740 ONLY)
                    HARMONY2 DETUNE         BnH,63H,02H,62H,31H,06H,mmH
                                                                (PSR-740 ONLY)

            RPN LSB                         BnH,64H
            RPN MSB                         BnH,65H
                PITCH BEND SENS.            BnH,65H,00H,64H,00H,06H,mmH
                FINE TUNING                 BnH,65H,00H,64H,01H,06H,mmH,
                                                                26H,llH
                COARSE TUNING               BnH,65H,00H,64H,02H,06H,mmH
                NULL                        BnH,65H,7FH,64H,7FH
            ALL SOUND OFF                   BnH,78H,00H
            RESET ALL CONTROLLERS           BnH,79H,00H
            ALL NOTES OFF                   BnH,7BH,00H
            OMNI OFF                        BnH,7CH,00H
            OMNI ON                         BnH,7DH,00H
            MONO                            BnH,7EH
            POLY                            BnH,7FH

        PROGRAM CHANGE                      CnH

        CHANNEL AFTER TOUCH                 DnH

        PITCH BEND CHANGE                   EnH

    SYSTEM EXCLUSIVE MESSAGE
            <YAMAHA MIDI FORMAT>
            <UNIVERSAL>
        UNIVERSAL REALTIME                  F0H 7FH.....F7H
        UNIVERSAL NON-REALTIME              F0H 7EH.....F7H
            <XG STANDARD>
        XG PARAMETER CHANGE                 F0H 43H 1nH 4CH aaH aaH aaH ddH
                                                                .....ddH F7H
        XG BULK DUMP                        F0H 43H 0nH 4CH bbH bbH aaH aaH aaH
                                                                ddH.....ddH ccH F7H
        PARAMETER REQUEST                   F0H 43H 3nH 4CH aaH aaH aaH F7H
        DUMP REQUEST                        F0H 43H 2nH 4CH aaH aaH aaH F7H
        SPECIAL OPERATORS
        Others

    SYSTEM REALTIME MESSAGE
            MIDI CLOCK                      F8H
            START                           FAH
            STOP                            FCH
            ACTIVE SENSING                  FEH
```

(3) TRANSMIT/RECEIVE DATA

(3-1) CHANNEL VOICE MESSAGES

(3-1-1) NOTE OFF (Receive only)

STATUS	1000nnnn(8nH)	n = 0 - 15 VOICE CHANNEL NUMBER
NOTE NUMBER	0kkkkkkk	k = 0 (C-2) - 127 (G8)
VELOCITY	0vvvvvvv	v: ignored

(3-1-2) NOTE ON/OFF

STATUS	1001nnnn(9nH)	n = 0 - 15 VOICE CHANNEL NUMBER
NOTE NUMBER	0kkkkkkk	k = 0 (C-2) - 127 (G8)
VELOCITY	0vvvvvvv	(v 0) NOTE ON
	00000000	(v=0) NOTE OFF

(3-1-3) PROGRAM CHANGE

STATUS	1100nnnn(CnH)	n = 0 - 15 VOICE CHANNEL NUMBER
PROGRAM NUMBER	0ppppppp	p = 0 - 127

*** PROGRAM NUMBER: XG DRUM VOICE number correspondence**

P = 0	Standard Kit
P = 1	Standard2 Kit
P = 4	Hit Kit
P = 8	Room Kit
P = 16	Rock Kit
P = 24	Elctrnic Kit
P = 25	Analog Kit
P = 27	Dance Kit
P = 32	Jazz Kit
P = 40	Brush Kit
P = 48	Symphony Kit

*** PROGRAM NUMBER: XG SFX KIT number correspondence**

P = 0	SFX1 Kit
P = 1	SFX2 Kit

When DRUM VOICE is selected and program change data for a different DRUM VOICE is received, the currently selected DRUM VOICE will be replaced with the new DRUM VOICE.

(3-1-4) CHANNEL AFTER TOUCH (Receive only)

STATUS	1101nnnn(DnH)	n = 0 - 15 VOICE CHANNEL NUMBER
VALUE	0vvvvvvv	v = 0 - 127 AFTER TOUCH VALUE

(3-1-5) PITCH BEND CHANGE

STATUS	1110nnnn(EnH)	n = 0 - 15 VOICE CHANNEL NUMBER
LSB	0vvvvvvv	PITCH BEND CHANGE LSB
MSB	0vvvvvvv	PITCH BEND CHANGE MSB

(3-1-6) CONTROL CHANGE

STATUS	1011nnnn(BnH)	n = 0 - 15 VOICE CHANNEL NUMBER
CONTROL NUMBER	0ccccccc	
CONTROL VALUE	0vvvvvvv	

*** Transmit CONTROL NUMBER.**

c = 0	BANK SELECT MSB	; v = 0:XG NORMAL, 64:SFX NORMAL, 126:XG SFX KIT, 127:XG DRUM	
c = 32	BANK SELECT LSB	; v = 0 - 127	
c = 1	MODULATION	; v = 0 - 127	*2 (PSR-740 ONLY)
c = 6	DATA ENTRY MSB	; v = 0 - 127	*1
c = 38	DATA ENTRY LSB	; v = 0 - 127	*1
c = 7	MAIN VOLUME	; v = 0 - 127	
c = 10	PANPOT	; v = 0 - 127	
c = 11	EXPRESSION	; v = 0 - 127	
c = 64	SUSTAIN	; v = 0-63:OFF , 64-127:ON	*2
c = 66	SOSTENUTO	; v = 0-63:OFF , 64-127:ON	*2
c = 67	SOFT PEDAL	; v = 0-63:OFF , 64-127:ON	*2
c = 71	HARMONIC CONTENT	; v = 0:-64 - 64:0 - 127:+63	*2 (PSR-740 ONLY)
c = 72	RELEASE TIME	; v = 0:-64 - 64:0 - 127:+63	
c = 74	BRIGHTNESS	; v = 0:-64 - 64:0 - 127:+63	*2 (PSR-740 ONLY)
c = 91	REVERB SEND LEVEL	; v = 0 - 127	
c = 93	CHORUS SEND LEVEL	; v = 0 - 127	
c = 94	VARIATION SEND LEVEL	; v = 0 - 127 (When only Connection = 1[System])	
c = 98	NRPN LSB	Refer to “(3-4)NON-REGISTERED PARAMETER NUMBER”	
c = 99	NRPN MSB	Refer to “(3-4)NON-REGISTERED PARAMETER NUMBER”	
c = 100	RPN LSB	Refer to “(3-3)REGISTERED PARAMETER NUMBER”	
c = 101	RPN MSB	Refer to “(3-3)REGISTERED PARAMETER NUMBER”	

*** Receive CONTROL NUMBER.**

c = 0	BANK SELECT MSB	; v = 0:XG NORMAL, 64:SFX NORMAL, 126:XG SFX KIT, 127:XG DRUM	
c = 32	BANK SELECT LSB	; v = 0 - 127	
c = 1	MODULATION	; v = 0 - 127	*2
c = 5	PORTAMENTO TIME	; v = 0 - 127	*2
c = 6	DATA ENTRY MSB	; v = 0 - 127	*1
c = 38	DATA ENTRY LSB	; v = 0 - 127	*1
c = 7	MAIN VOLUME	; v = 0 - 127	
c = 10	PANPOT	; v = 0 - 127	
c = 11	EXPRESSION	; v = 0 - 127	
c = 64	SUSTAIN	; v = 0-63:OFF , 64-127:ON	*2
c = 65	PORTAMENTO	; v = 0-63:OFF , 64-127:ON	*2
c = 66	SOSTENUTO	; v = 0-63:OFF , 64-127:ON	*2
c = 67	SOFT PEDAL	; v = 0-63:OFF , 64-127:ON	*2
c = 71	HARMONIC CONTENT	; v = 0:-64 - 64:0 - 127:+63	*2
c = 72	RELEASE TIME	; v = 0:-64 - 64:0 - 127:+63	*2
c = 73	ATTACK TIME	; v = 0:-64 - 64:0 - 127:+63	*2
c = 74	BRIGHTNESS	; v = 0:-64 - 64:0 - 127:+63	*2
c = 84	PORTAMENT CONTROL	; v = 0 - 127	*2
c = 91	REVERB SEND LEVEL	; v = 0 - 127	
c = 93	CHORUS SEND LEVEL	; v = 0 - 127	
c = 94	VARIATION SEND LEVEL	; v = 0 - 127 (When only Connection=1[System])	
c = 96	DATA INCREMENT	; v = 0 - 127	*1
c = 97	DATA DECREMENT	; v = 0 - 127	*1
c = 98	NRPN LSB	Refer to “(3-4)NON-REGISTERED PARAMETER NUMBER”	
c = 99	NRPN MSB	Refer to “(3-4)NON-REGISTERED PARAMETER NUMBER”	
c = 100	RPN LSB	Refer to “(3-3)REGISTERED PARAMETER NUMBER”	
c = 101	RPN MSB	Refer to “(3-3)REGISTERED PARAMETER NUMBER”	

*1 Only when setting the appointed parameter with RPN, NRPN.
*2 Does not effect Rhythm Voice.

- Until a PROGRAM CHANGE message is received, the BANK SELECT operation will be suspended.
  When a Voice, including VOICE BANK, is changed, set the BANK SELECT and Program Change Message, and transmit in the following order, BANK SELECT MSB, LSB, PROGRAM CHANGE.
- MODULATION controls the Vibrato Depth.
- PORTAMENTO TIME controls the Pitch Change Speed when the Portamento Switch = ON. 0 being the shortest time, and 127 being the longest.
- PANPOT changes the value for the melody voice and rhythm voice in relation to the preset value.
- Portamento time is fixed to 0 when the PORTAMENTO CONTROL is used.
- HARMONIC CONTENT applies adjustment to the resonance value that is set by the voice. This parameter specifies relative change with the value of 64 producing 0 adjustment. As values get higher the sound becomes increasingly eccentric. Note that for some voices the effective parameter range is narrower than the legal parameter range.
- RELEASE TIME applies adjustment to the envelope release time set by the voice. This parameter specifies relative change with the value of 64 producing 0 adjustment.
- ATTACK TIME applies adjustment to the envelope attack time set by the voice. This parameter specifies relative change with the value of 64 producing 0 adjustment.
- BRIGHTNESS applies adjustment to the cut-off frequency set by the voice. This parameter specifies relative change with the value of 64 producing 0 adjustment. Lower voices produce a softer sound. For some voices the effective parameter range is narrower than the legal parameter range.

(3-2) CHANNEL MODE MESSAGES

STATUS	1011nnnn(BnH)	n = 0 - 15 VOICE CHANNEL NUMBER
CONTROL NUMBER	0ccccccc	c = CONTROL NUMBER
CONTROL VALUE	0vvvvvvv	v = DATA VALUE

(3-2-1) ALL SOUND OFF (Receive only) (CONTROL NUMBER = 78H , DATA VALUE = 0)
Switches off all sound from the channel.
Does not reset Note On and Hold On conditions established by Channel Messages.

(3-2-2) RESET ALL CONTROLLERS (Receive only)
(CONTROL NUMBER = 79H , DATA VALUE = 0)

Resets controllers as follows.

PITCH BEND CHANGE	0 (Center)
AFTER TOUCH	0 (min.)
MODULATION	0 (min.)
EXPRESSION	127 (max.)
SUSTAIN	0 (off)
SOSTENUTO	0 (off)
SOFT PEDAL	0 (off)
NRPN	Sets number to null. (Internal data remains unchanged)
RPN	Sets number to null. (Internal data remains unchanged)
PORTAMENT CONTROL	Resets portamento source note number
PORTAMENTO	0 (off)

(3-2-3) ALL NOTES OFF (Receive only)
(CONTROL NUMBER = 7BH , DATA VALUE = 0)

Switches off all of the channel's "on" notes.
However, any notes being held by SUSTAIN or SOSTENUTO continue to sound until SUSTAIN/SOSTENUTO goes off.

(3-2-4) OMNI OFF (Receive only) (CONTROL NUMBER = 7CH , DATA VALUE = 0)
Same processing as for All Notes Off.

(3-2-5) OMNI ON (Receive only) (CONTROL NUMBER = 7DH , DATA VALUE = 0)
Same processing as for All Notes Off. Omni On is not executed.

(3-2-6) MONO (Receive only) (CONTROL NUMBER = 7EH , DATA VALUE = 0)
Same processing as for All Notes Off.
If the 3rd byte is in a range of 0-16 the corresponding channel will be changed to Mode 4 (m=1).

(3-2-7) POLY (Receive only) (CONTROL NUMBER = 7FH , DATA VALUE = 0)
Same processing as for All Sounds Off and the corresponding channel will be changed to Mode 3.

(3-3) REGISTERED PARAMETER NUMBER (RPN)

STATUS	1011nnnn(BnH)	n = 0 - 15 VOICE CHANNEL NUMBER
RPN LSB	01100100(64H)	
RPN LSB NUMBER	0ppppppp	p = RPN LSB(refer to the list below)
RPN MSB	01100101(65H)	
RPN MSB	0qqqqqqq	q = RPN MSB(refer to the list below)
DATA ENTRY MSB	00000110(06H)	
DATA VALUE	0mmmmmmm	m = Data Value
DATA ENTRY LSB	00100110(26H)	
DATA VALUE	0lllllll	l = Data Value

First appoints the parameter for RPN MSB/LSB, then sets the parameter value for data entry MSB/LSB.

RPN MSB	RPN LSB	D.ENTRY MSB	D.ENTRY LSB	PARAMETER NAME	DATA RANGE
00H	00H	mmH	—	PITCH BEND SENSITIVITY	00H - 18H(0 - 24 semitones)
01H	00H	mmH	llH	FINE TUNE	{mmH,llH} = {00H,00H}-{40H,00H}-{7FH,7FH} (-8192*100/8192) - 0 - (+8192*100/8192)
02H	00H	mmH	—	COARSE TUNE	28H - 40H - 58H (-24 - 0 - +24 semitones)
7FH	7FH	—	—	NULL	Clears the current RPN number setting. Does not change the internal parameter settings.

(3-4) NON-REGISTERED PARAMETER NUMBER (NRPN) (PSR-640 Receive only)

STATUS	1011nnnn(BnH)	n = 0 - 15 VOICE CHANNEL NUMBER
NRPN LSB	01100010(62H)	
NRPN LSB NUMBER	0ppppppp	p = NRPN LSB(refer to the list below)
NRPN MSB	01100011(63H)	
NRPN MSB NUMBER	0qqqqqqq	q = NRPN MSB(refer to the list below)
DATA ENTRY MSB	00000110(06H)	
DATA VALUE	0mmmmmmm	m = Data Value

First appoints the parameter for NRPN MSB/LSB, then sets the parameter value for data entry MSB/LSB.

NRPN MSB	NRPN LSB	D.ENTRY MSB	D.ENTRY LSB	PARAMETER NAME	DATA RANGE
01H	08H	mmH	—	VIBRATO RATE	00H - 40H - 7FH (-64 - 0 - +63)
01H	09H	mmH	—	VIBRATO DEPTH	00H - 40H - 7FH (-64 - 0 - +63)
01H	0AH	mmH	—	VIBRATO DELAY	00H - 40H - 7FH (-64 - 0 - +63)
01H	20H	mmH	—	FILTER CUTOFF FREQUENCY	00H - 40H - 7FH (-64 - 0 - +63)
01H	21H	mmH	—	FILTER RESONANCE	00H - 40H - 7FH (-64 - 0 - +63)
01H	30H	mmH	—	EQ BASS	00H - 40H - 7FH (-64 - 0 - +63) (PSR-740 ONLY)
01H	31H	mmH	—	EQ TREBLE	00H - 40H - 7FH (-64 - 0 - +63) (PSR-740 ONLY)
01H	34H	mmH	—	EQ BASS FREQUENCY	00H - 40H - 7FH (-64 - 0 - +63) (PSR-740 ONLY)
01H	35H	mmH	—	EQ TREBLE FREQUENCY	00H - 40H - 7FH (-64 - 0 - +63) (PSR-740 ONLY)
01H	63H	mmH	—	EG ATTACK TIME	00H - 40H - 7FH (-64 - 0 - +63)
01H	64H	mmH	—	EG DECAY TIME	00H - 40H - 7FH (-64 - 0 - +63)
01H	66H	mmH	—	EG RELEASE	00H - 40H - 7FH (-64 - 0 - +63)
14H	rrH	mmH	—	DRUM FILTER CUTOFF FREQ.	00H - 40H - 7FH (-64 - 0 - +63)
15H	rrH	mmH	—	DRUM FILTER RESONANCE	00H - 40H - 7FH (-64 - 0 - +63)
16H	rrH	mmH	—	DRUM AEG ATTACK RATE	00H - 40H - 7FH (-64 - 0 - +63)
17H	rrH	mmH	—	DRUM AEG DECAY RATE	00H - 40H - 7FH (-64 - 0 - +63)
18H	rrH	mmH	—	DRUM PITCH COARSE	00H - 40H - 7FH (-64 - 0 - +63)
19H	rrH	mmH	—	DRUM PITCH FINE	00H - 40H - 7FH (-64 - 0 - +63)
1AH	rrH	mmH	—	DRUM LEVEL	00H - 7FH (0 - max.)
1CH	rrH	mmH	—	DRUM PANPOT	00H,01H - 40H - 7FH (random,left - center - right)
1DH	rrH	mmH	—	DRUM REVERB SEND LEVEL	00H - 7FH (0 - max.)
1EH	rrH	mmH	—	DRUM CHORUS SEND LEVEL	00H - 7FH (0 - max.)
1FH	rrH	mmH	—	DRUM VARIATION SEND LEVEL	00H - 7FH (0 - max.)
00H	01H	mmH	—	HARMONY MUTE	(PSR-740 ONLY)
01H	1AH	mmH	—	DETUNE MODULATION	(PSR-740 ONLY)
02H	10H	mmH	—	HARMONY1 VOLUME	(PSR-740 ONLY)
02H	11H	mmH	—	HARMONY2 VOLUME	(PSR-740 ONLY)
02H	20H	mmH	—	HARMONY1 PAN	(PSR-740 ONLY)
02H	21H	mmH	—	HARMONY2 PAN	(PSR-740 ONLY)
02H	30H	mmH	—	HARMONY1 DETUNE	(PSR-740 ONLY)
02H	31H	mmH	—	HARMONY2 DETUNE	(PSR-740 ONLY)

The MSG14H-1FH (for drums) message is accepted as long as the channel is set with a drum voice.
rrH : drum instrument note number

(3-5) SYSTEM REALTIME MESSAGES

(3-5-1) MIDI CLOCK
STATUS 11111000 (F8H)
Transmission: 96 clocks per measure are transmitted.
Reception: If the instrument's clock is set to external, after FAH is received from the external device the instrument's clock will sync with the 96 beats per measure received from the external device.

Decides whether the internal clock, or Timing Clocks received via the MIDI IN will be used.

(3-5-2) START
STATUS 11111010 (FAH)
Transmission: Transmitted when instrument's Rhythm or Song playback is started.
Reception: Depending upon the condition, Rhythm, Song Playback, or Song Rec will start.

(3-5-3) STOP
STATUS 11111100 (FCH)
Transmission: Transmitted when instrument's Rhythm or Song playback is stopped.
Reception: Depending upon the condition, Rhythm, Song Playback, or Song Rec will stop.

(3-5-4) ACTIVE SENSING
STATUS 11111110 (FEH)
Transmission: Transmitted approximately once every 200msec.
Reception: Depending upon the condition, Rhythm, Song Playback, or Song Rec will stop.

(3-6) SYSTEM EXCLUSIVE MESSAGE

(3-6-1) YAMAHA MIDI FORMAT

(3-6-1-1) SECTION CONTROL

(PSR-640)

binary	hexadecimal		
11110000	F0	Exclusive status	
01000011	43	YAMAHA ID	
01111110	7E	Style	
00000000	00		
0sssssss	SS	Switch No.	
		00H	: INTRO A
		01H	: INTRO B
		02H	: INTRO C
		03H - 07H	: INTRO D
		08H	: MAIN A
		09H	: MAIN B
		0AH	: MAIN C
		0BH - 0FH	: MAIN D
		10H	: FILL IN A
		11H	: FILL IN B
		12H	: FILL IN C
		13H - 17H	: FILL IN D
		18H	: BREAK FILL IN A
		19H	: BREAK FILL IN B
		1AH	: BREAK FILL IN C
		1BH - 1FH	: BREAK FILL IN D
		20H	: ENDING A
		21H	: ENDING B
		22H	: ENDING C
		23H - 27H	: ENDING D
0ddddddd	DD	Switch On/Off: 00H(Off),7FH(On)	
11110111	F7	End of Exclusive	

(PSR-740)

binary	hexadecimal		
11110000	F0	Exclusive status	
01000011	43	YAMAHA ID	
01111110	7E	Style	
00000000	00		
0sssssss	SS	Switch No.	
		00H	: INTRO A
		01H	: INTRO B
		02H	: INTRO C
		03H	: INTRO D
		04H	: COUNT INTRO A
		05H	: COUNT INTRO B
		06H	: COUNT INTRO C
		07H	: COUNT INTRO D
		08H	: MAIN A
		09H	: MAIN B
		0AH	: MAIN C
		0BH - 0FH	: MAIN D
		10H	: FILL IN A
		11H	: FILL IN B
		12H	: FILL IN C
		13H - 17H	: FILL IN D
		18H	: BREAK FILL IN A
		19H	: BREAK FILL IN B
		1AH	: BREAK FILL IN C
		1BH - 1FH	: BREAK FILL IN D
		20H	: ENDING A
		21H	: ENDING B
		22H	: ENDING C
		23H	: ENDING D
		24H	: SIMPLE ENDING A
		25H	: SIMPLE ENDING B
		26H	: SIMPLE ENDING C
		27H	: SIMPLE ENDING D
0ddddddd	DD	Switch On/Off: 00H(Off),7FH(On)	
11110111	F7	End of Exclusive	

When an ON code is received, the appointed section will be changed.

(3-6-1-2) TEMPO CONTROL

binary	hexadecimal	
11110000	F0	Exclusive status
01000011	43	YAMAHA ID
01111110	7E	Style
00000000	01	
0ttttttt	TT	Tempo4
0ttttttt	TT	Tempo3
0ttttttt	TT	Tempo2
0ttttttt	TT	Tempo1
11110111	F7	End of Exclusive

The internal clock will be set to the received Tempo value.
Tempo Meta Event is a large data block (24-bit),it is divided into 4 groups with 7-bits going into each of the Tempos 1-4 (4 receives the remaining 3 bits).

(3-6-2) UNIVERSAL SYSTEM EXCLUSIVE

(3-6-2-1) UNIVERSAL REALTIME MESSAGE

(3-6-2-1-1) MIDI MASTER VOLUME (Receive only)

binary	hexadecimal	
11110000	F0	Exclusive status
01111111	7F	Universal Realtime
01111111	7F	ID of target Device
00000100	04	Sub-ID #1=Device Control Message
00000001	01	Sub-ID #2=Master Volume
0sssssss	SS	Volume LSB
0ttttttt	TT	Volume MSB
11110111	F7	End of Exclusive
or		
11110000	F0	Exclusive status
01111111	7F	Universal Realtime
0xxxnnnn	XN	When N is received N=0-F, whichever is received. When N is transmitted N always=0. X = don't care
00000100	04	Sub-ID #1=Device Control Message
00000001	01	Sub-ID #2=Master Volume
0sssssss	SS	Volume LSB
0ttttttt	TT	Volume MSB
11110111	F7	End of Exclusive

The volume for all channels will be changed simultaneously.
The TT value is used as the MIDI Master Volume value. (the ss value is ignored.)

(3-6-2-2) UNIVERSAL NON REALTIME MESSAGE

(3-6-2-2-1) GENERAL MIDI SYSTEM ON

binary	hexadecimal	
11110000	F0	Exclusive status
01111110	7E	Universal Non-Realtime
01111111	7F	ID of target Device
00001001	09	Sub-ID #1=General MIDI Message
00000001	01	Sub-ID #2=General MIDI On
11110111	F7	End of Exclusive
or		
11110000	F0	Exclusive status
01111110	7E	Universal Non-Realtime
0xxxnnnn	XN	When N is received N=0-F, whichever is received. When N is transmitted N always=0. X = don't care
00001001	09	Sub-ID #1=General MIDI Message
00000001	01	Sub-ID #2=General MIDI On
11110111	F7	End of Exclusive

Depending upon the received ON message, the System Mode will be changed to XG.
Except MIDI Master Tuning, all control data be reset to default values.
This message requires approximately 50ms to execute, so sufficient time should be allowed before the next message is sent.
The bank select message for the channel 10 and the NRPN message are not received in the GM mode.

(3-6-3) XG STANDARD

(3-6-3-1) XG PARAMETER CHANGE

(3-6-3-1-1) XG SYSTEM ON

binary	hexadecimal	
11110000	F0	Exclusive status
01000011	43	YAMAHA ID
0001nnnn	1N	Device Number
01001100	4C	Model ID
00000000	00	Address High
00000000	00	Address Mid
01111110	7E	Address Low
00000000	00	Data
11110111	F7	End of Exclusive

Depending upon the received ON message, the SYSTEM MODE will be changed to XG.Controllers will be reset, all values of Multi Part and Effect, and All System values denoted by "XG" data within All System will be reset to default values in the table.
This message requires approximately 50ms to execute, so sufficient time should be allowed before the next message is sent.

(3-6-3-1-2) XG PARMETER CHANGE

binary	hexadecimal	
11110000	F0	Exclusive status
01000011	43	YAMAHA ID
0001nnnn	1N	Device Number
01001100	4C	Model ID
0aaaaaaa	AA	Address High
0aaaaaaa	AA	Address Mid
0aaaaaaa	AA	Address Low
0ddddddd	DD	Data
|	|	
11110111	F7	End of Exclusive

For parameters with data size of 2 or 4, transmit the appropriate number of data bytes.
For more information on Address and Parameters, refer to < Table 1-2 > - < Table 1-8 >.

The data types listed below are transmitted and received.
- System Data
- Multi Effect1 Data
- Multi EQ Data (PSR-740 ONLY)
- Multi Effect2 Data (PSR-740 ONLY)
- Special Effect Data (PSR-740 ONLY)
- Multi Part Data
- A/D Part Data (PSR-740 ONLY)
- Drums Setup Data

(3-6-3-2) XG BULK DUMP

binary	hexadecimal	
01110000	F0	Exclusive status
01000011	43	YAMAHA ID
0000nnnn	0N	Device Number
01001100	4C	Model ID
0bbbbbbb	BB	ByteCount MSB
0bbbbbbb	BB	ByteCount LSB
0aaaaaaa	AA	Address High
0aaaaaaa	AA	Address Mid
0aaaaaaa	AA	Address Low
0ddddddd	DD	Data
|	|	
0ccccccc	CC	Check sum
11110111	F7	End of Exclusive

For more information on Address and Byte Count, refer to < Table 1-2 > - < Table 1-8 >.
The Check Sum value is set such that the sum of Byte Count, Address, Data, and Check Sum has value zero in its seven least significant bits.
If the top of the block is appointed to the Address the XG Bulk Dump, Bulk Request will be received.
The Block is a unit that consists of the data, arranged in the list, as the Total Size.

The data types listed below are transmitted and received.(These are transmitted only after a Bulk Dump request is received.)
- System Data
- System Information (Transmit ONLY)
- Multi Effect1 Data
- Multi EQ Data (PSR-740 ONLY)
- Multi Effect2 Data (PSR-740 ONLY)
- Special Effect Data (PSR-740 ONLY)
- Multi Part Data
- A/D Part Data (PSR-740 ONLY)
- Drums Setup Data

(3-6-3-3) XG PARAMETER REQUEST (Receive only)

binary	hexadecimal	
11110000	F0	Exclusive status
01000011	43	YAMAHA ID
0011nnnn	3n	Device Number
01001100	4C	Model ID
0aaaaaaa	AA	Address High
0aaaaaaa	AA	Address Mid
0aaaaaaa	AA	Address Low
11110111	F7	End of Exclusive

For more information on Address and Byte Count refer to < Table 1-2 > - < Table1-8 >.

The data types listed below are received.
- System Data
- Multi Effect1 Data
- Multi EQ Data (PSR-740 ONLY)
- Multi Effect2 Data (PSR-740 ONLY)
- Special Effect Data (PSR-740 ONLY)
- Multi Part Data
- A/D Part Data (PSR-740 ONLY)
- Drums Setup Data

(3-6-3-4) XG DUMP REQUEST (Receive only)

binary	hexadecimal	
11110000	F0	Exclusive status
01000011	43	YAMAHA ID
0010nnnn	2n	Device Number
01001100	4C	Model ID
00aaaaaa	AA	Address High
00aaaaaa	AA	Address Mid
00aaaaaa	AA	Address Low
11110111	F7	End of Exclusive

For more information on Address and Byte Count refer to < Table 1-2 > - < Table1-8 >.

The data types listed below are received.
- System Data
- System Information
- Multi Effect1 Data
- Multi EQ Data (PSR-740 ONLY)
- Multi Effect2 Data (PSR-740 ONLY)
- Special Effect Data (PSR-740 ONLY)
- Multi Part Data
- A/D Part Data (PSR-740 ONLY)
- Drums Setup Data

(3-6-4) CLAVINOVA MIDI COMPLIANCE

(3-6-4-1) DOC MULTI TIMBRE ON / OFF (Receive only)

binary	hexadecimal	
11110000	F0	Exclusive status
01000011	43	YAMAHA ID
01110011	73	Clavinova ID
00000001	01	Clavinova commmon ID
00010nnn	1N	N: 3(DOC Multi Timbre Off), 4(DOC Multi Timbre On)
11110111	F7	End of Exclusive

(3-6-4-2) MIDI FA CANCEL(Receive only)

binary	hexadecimal	
11110000	F0	Exclusive status
01000011	43	YAMAHA ID
01110011	73	Clavinova ID
00000001	01	Clavinova common ID
01100001	61	MIDI FA Cancel
11110111	F7	End of Exclusive

If this message is received, even if FAH is received the accompaniment/song will not start.

(3-6-4-3) BULK DATA ORGAN FLUTE DATA (PSR-740 ONLY)

binary	hexadecimal	
11110000	F0	Exclusive status
01000011	43	YAMAHA ID
01110011	73	Clavinova ID
00000001	01	Clavinova common ID
00000110	06	Bulk ID
00001011	0B	Bulk No.(0BH : ORGAN FLUTE DATA)
00000000	00	Data Length
00000000	00	Data Length
00000001	01	Data Length
00000110	06	Data Length
0ddddddd	d1	Bulk Data 1st
	:	
0ddddddd	d22	Bulk Data 22th
00cccccc	cc	don't care
11110111	F7	End of Exclusive

[BULK DATA]

1st	0nH	n: channel No.		Discription
2nd	Drawber	[1']	00 - 07H	0 : - [dB]
3rd		[1 1/3']	00 - 07H	1 : -12 [dB]
4th		[aux. 1]	00H	2 : -9 [dB]
5th		[2']	00 - 07H	3 : -6 [dB]
6th		[2 2/3']	00 - 07H	4 : -4.5 [dB]
7th		[4']	00 - 07H	5 : -3 [dB]
8th		[5 1/3']	00 - 07H	6 : -1.5 [dB]
9th		[8']	00 - 07H	7 : 0 [dB]
10th		[16']	00 - 07H	
11th		[Attack 2']	00 - 07H	
12th		[Attack 2 2/3']	00 - 07H	
13th		[Attack 4']	00 - 07H	
14th	Settings	[Attack Length]	00 - 07H	
15th		[Response]	00 - 07H	
16th		[Attack Mode]	00 - 01H	00H : Each, 01 : First
17th		[Wave Variation]	00 - 01H	00H: Sine, 01H: Tone Wheel
18th		[Volume]	00 - 08H	
19th		[aux. 4]	00H	
20th		[aux. 5]	00H	
21th		[aux. 6]	00H	
22th		[aux. 7]	00H	

(3-6-5) SPECIAL OPERATORS

(3-6-5-1) VOLUME ,EXPRESSION AND PAN REALTIME CONTROL OFF

binary	hexadecimal	
11110000	F0	Exclusive status
01000011	43	YAMAHA ID
01110011	73	Clavinova ID
00000001	01	Clavinova common ID
00010001	11	Sub ID
0000nnnn	0N	N = MIDI Channel
01000101	45	Volume and Expression Realtime Control Off
0vvvvvvv	VV	Value VV: Off=7FH, on=OOH
11110111	F7	End of Exclusive

When "On" is received, subsequent volume, expression, and PAN changes are only valid after the reception of the next key on.
Normal operation resumes when "Off" is received.

(3-6-5-2) Vocal Harmony Pitch to Note (PSR-740 ONLY)

binary	hexadecimal	
11110000	F0	Exclusive status
01000011	43	YAMAHA ID
01110011	73	Clavinova ID
00000001	01	Clavinova common ID
00010001	11	Sub ID
00000000	00	Channel No. (always 00)
01010000	50	Vocal Harmony Additional Parameter Control No.
00000000	00	Pitch to Note Parameter No.
0sssssss	SS	Pitch To Note switch 00H : Off 01H : On
11110111	F7	End of Exclusive

(3-6-5-3) Vocal Harmony Pitch to Note Part (PSR-740 ONLY)

binary	hexadecimal	
11110000	F0	Exclusive status
01000011	43	YAMAHA ID
01110011	73	Clavinova ID
00000001	01	Clavinova common ID
00010001	11	Sub ID
00000000	00	Channel No. (always 00)
01010000	50	Vocal Harmony Additional Parameter Control No.
00000001	01	Pitch to Note Part Parameter No.
0sssssss	SS	Pitch To Note Part No. 00H : Right1 01H : Right2 02H : Left 04H : Upper
11110111	F7	End of Exclusive

(3-6-5-4) Vocal Harmony Vocoder Part (Harmony Part(Panel)) (PSR-740 ONLY)

binary	hexadecimal	
11110000	F0	Exclusive status
01000011	43	YAMAHA ID
01110011	73	Clavinova ID
00000001	01	Clavinova common ID
00010001	11	Sub ID
00000000	00	Channel No. (always 00)
01010000	50	Vocal Harmony Additional Parameter Control No.
00010000	10	Vocoder Part Parameter No.
0sssssss	SS	Harmony Part No. 00H : Off 01H : Upper 02H : Lower
11110111	F7	End of Exclusive

(3-6-5-5) Voval Harmony Additional Reverb Depth(Receive only) (PSR-740 ONLY)

binary	hexadecimal	
11110000	F0	Exclusive status
01000011	43	YAMAHA ID
01110011	73	Clavinova ID
00000001	01	Clavinova common ID
00010001	11	Sub ID
00000000	00	Channel No. (always 00)
01010000	50	Vocal Harmony Additional Parameter Control No.
00010001	11	Voval Harmony Additional Reverb Depth Parameter No.
0sssssss	SS	Value (0 - 7FH)
11110111	F7	End of Exclusive

(3-6-5-6) Vocal Harmony Additional Chorus Depth(Receive only) (PSR-740 ONLY)

binary	hexadecimal	
11110000	F0	Exclusive status
01000011	43	YAMAHA ID
01110011	73	Clavinova ID
00000001	01	Clavinova common ID
00010001	11	Sub ID
00000000	00	Channel No. (always 00)
01010000	50	Vocal Harmony Additional Parameter Control No.
00010010	12	Voval Harmony Additional Chorus Depth Parameter No.
0sssssss	SS	Value (0 - 7FH)
11110111	F7	End of Exclusive

(3-6-6) Others

(3-6-6-1) MIDI MASTER TUNING(Receive only)

binary	hexadecimal	
11110000	F0	Exclusive status
01000011	43	YAMAHA ID
0001nnnn	1N	When N is received N=0-F, whichever is received. When N is transmitted N always=0.
00100111	27	Model ID
00110000	30	Sub ID
00000000	00	
00000000	00	
0mmmmmmm	MM	Master Tune MSB
0lllllll	LL	Master Tune LSB
0ccccccc	CC	don't care
11110111	F7	End of Exclusive

Changes tuning of all channels.
MM, LL values are used to define the MIDI Master Tuning value.

T = M-128

T : Tuning value (-99cent - +99cent)
M : A single byte value (28-228) consists of bytes 0-3 of MM = MSB,
bytes 0-3 of LL = LSB.

In this setting, GM System ON, XG System ON will not be reset.

< Table 1-1> Parmeter Basic Address

	Parameter Change Address (H)	(M)	(L)	Description
SYSTEM	00	00	00	System
	00	00	7D	Drum Setup Reset
	00	00	7E	XG System On
	00	00	7F	All Parameter Reset
INFORMATION	01	00	00	System Information
EFFECT 1	02	01	00	Effect1(Reverb,Chorus,Variation)
MULTI EQ	02	40	00	Multi EQ(PSR-740 ONLY)
EFFECT 2	03	00	00	Effect2(PSR-740 ONLY)
SPECIAL EFFECT	04	00	00	Special Effect2(PSR-740 ONLY)
MULTI PART	08	00	00	Multi Part 1
		:		:
	08	0F	00	Multi Part 16
A/D PART	10	00	00	A/D Part 1(PSR-740 ONLY)
DRUM	30	0D	00	Drum Setup 1 ——→
	31	0D	00	Drum Setup 2

Address			Parameter
:			:
3n	0D	0	note number 13
3n	0E	0	note number 14
	:		:
3n	5B	0	note number 91

<Table 1-2> MIDI Parameter Change table (SYSTEM)

Address (H)			Size (H)	Data (H)	Prameter Name	Description	Default Value (H)
00	00	00	4	0000	Master Tune	-102.4..+102.3[cent]	00 04 00 00
	01			..07FF		1st bit3-0 → bit15-12	(400)
	02					2nd bit3-0 → bit11-8	(With XG, GM On, it will not reset.)
	03					3rd bit3-0 → bit7-4	
						4th bit3-0 → bit3-0	
	04		1	00..7F	Master Volume	0..127	7F
	05		1		Not Used		
	06		1	28..58	Transpose	-24..+24[semitones]	40
	7D			0n	Drum Setup Reset	n=Drum Setup Number	
	7E			00	XG System On	00=XG Sytem on	
	7F			00	All Parameter Reset	00=on (receive only)	

TOTAL SIZE 7

<Table 1-3> MIDI Parameter table (System information)

Address (H)			Size (H)	Data (H)	Prameter Name	Description
01	00	00	E	20..7F	Model Name	32..127(ASCII)
		:				
		0D				
		0E	1	00		
		0F	1	00		

TOTAL SIZE 10

(Transmitted by Dump Request. Not received. Bulk Dump Only)

<Table 1-4> MIDI Parameter Change table (EFFECT 1)

Address (H)			Size (H)	Data (H)	Prameter Name	Description	Default Value (H)
02	01	00	2	00..7F	Reverb Type MSB	Refer to the Ef. Type List	01(=HALL1)
				00..7F	Reverb Type LSB	00 : basic type	00
		02	1	00..7F	Reverb Parameter 1	Refer to the Ef. Parameter List	Depend on Reverb type
		03	1	00..7F	Reverb Parameter 2	Refer to the Ef. Parameter List	Depend on Reverb type
		04	1	00..7F	Reverb Parameter 3	Refer to the Ef. Parameter List	Depend on Reverb type
		05	1	00..7F	Reverb Parameter 4	Refer to the Ef. Parameter List	Depend on Reverb type
		06	1	00..7F	Reverb Parameter 5	Refer to the Ef. Parameter List	Depend on Reverb type
		07	1	00..7F	Reverb Parameter 6	Refer to the Ef. Parameter List	Depend on Reverb type
		08	1	00..7F	Reverb Parameter 7	Refer to the Ef. Parameter List	Depend on Reverb type
		09	1	00..7F	Reverb Parameter 8	Refer to the Ef. Parameter List	Depend on Reverb type
		0A	1	00..7F	Reverb Parameter 9	Refer to the Ef. Parameter List	Depend on Reverb type
		0B	1	00..7F	Reverb Parameter 10	Refer to the Ef. Parameter List	Depend on Reverb type
		0C	1	00..7F	Reverb Return	- ..0..+6dB(0..64..127)	40
		0D	1	01..7F	Reverb Pan	L63..C..R63(1..64..127)	40

TOTAL SIZE 0E

02	01	10	1	00..7F	Reverb Parameter 11	Refer to the Ef. Parameter List	Depend on Reverb type
		11	1	00..7F	Reverb Parameter 12	Refer to the Ef. Parameter List	Depend on Reverb type
		12	1	00..7F	Reverb Parameter 13	Refer to the Ef. Parameter List	Depend on Reverb type
		13	1	00..7F	Reverb Parameter 14	Refer to the Ef. Parameter List	Depend on Reverb type
		14	1	00..7F	Reverb Parameter 15	Refer to the Ef. Parameter List	Depend on Reverb type
		15	1	00..7F	Reverb Parameter 16	Refer to the Ef. Parameter List	Depend on Reverb type

TOTAL SIZE 6

02	01	20	2	00..7F	Chorus Type MSB	Refer to the Ef. Type List	41(=Chorus1)
				00..7F	Chorus Type LSB	00 : basic type	00
		22	1	00..7F	Chorus Parameter 1	Refer to the Ef. Parameter List	Depend on Chorus Type
		23	1	00..7F	Chorus Parameter 2	Refer to the Ef. Parameter List	Depend on Chorus Type
		24	1	00..7F	Chorus Parameter 3	Refer to the Ef. Parameter List	Depend on Chorus Type
		25	1	00..7F	Chorus Parameter 4	Refer to the Ef. Parameter List	Depend on Chorus Type
		26	1	00..7F	Chorus Parameter 5	Refer to the Ef. Parameter List	Depend on Chorus Type
		27	1	00..7F	Chorus Parameter 6	Refer to the Ef. Parameter List	Depend on Chorus Type
		28	1	00..7F	Chorus Parameter 7	Refer to the Ef. Parameter List	Depend on Chorus Type
		29	1	00..7F	Chorus Parameter 8	Refer to the Ef. Parameter List	Depend on Chorus Type
		2A	1	00..7F	Chorus Parameter 9	Refer to the Ef. Parameter List	Depend on Chorus Type
		2B	1	00..7F	Chorus Parameter 10	Refer to the Ef. Parameter List	Depend on Chorus Type
		2C	1	00..7F	Chorus Return	- ..0..+6dB(0..64..127)	40
		2D	1	01..7F	Chorus Pan	L63..C..R63(1..64..127)	40
		2E	1	00..7F	Send Chorus To Reverb	- ..0..+6dB(0..64..127)	00

TOTAL SIZE 0F

02	01	30	1	00..7F	Chorus Parameter 11	Refer to the Ef. Parameter List	Depend on Chorus Type
		31	1	00..7F	Chorus Parameter 12	Refer to the Ef. Parameter List	Depend on Chorus Type
		32	1	00..7F	Chorus Parameter 13	Refer to the Ef. Parameter List	Depend on Chorus Type
		33	1	00..7F	Chorus Parameter 14	Refer to the Ef. Parameter List	Depend on Chorus Type
		34	1	00..7F	Chorus Parameter 15	Refer to the Ef. Parameter List	Depend on Chorus Type
		35	1	00..7F	Chorus Parameter 16	Refer to the Ef. Parameter List	Depend on Chorus Type

TOTAL SIZE 6

Address (H)			Size (H)	Data (H)	Prameter Name	Description	Default Value (H)
02	01	40	2	00..7F	Variation Type MSB	Refer to the Ef. Type List	05(=DELAY L,C,R)
				00..7F	Variation Type LSB	00 : basic type	00
		42	2	00..7F	Vari. Param. 1 MSB	Refer to the Ef. Parameter List	Depend on Vari. Type
				00..7F	Vari. Param. 1 LSB	Refer to the Ef. Parameter List	Depend on Vari. Type
		44	2	00..7F	Vari. Param. 2 MSB	Refer to the Ef. Parameter List	Depend on Vari. Type
				00..7F	Vari. Param. 2 LSB	Refer to the Ef. Parameter List	Depend on Vari. Type
		46	2	00..7F	Vari. Param. 3 MSB	Refer to the Ef. Parameter List	Depend on Vari. Type
				00..7F	Vari. Param. 3 LSB	Refer to the Ef. Parameter List	Depend on Vari. Type
		48	2	00..7F	Vari. Param. 4 MSB	Refer to the Ef. Parameter List	Depend on Vari. Type
				00..7F	Vari. Param. 4 LSB	Refer to the Ef. Parameter List	Depend on Vari. Type
		4A	2	00..7F	Vari. Param. 5 MSB	Refer to the Ef. Parameter List	Depend on Vari. Type
				00..7F	Vari. Param. 5 LSB	Refer to the Ef. Parameter List	Depend on Vari. Type
		4C	2	00..7F	Vari. Param. 6 MSB	Refer to the Ef. Parameter List	Depend on Vari. Type
				00..7F	Vari. Param. 6 LSB	Refer to the Ef. Parameter List	Depend on Vari. Type
		4E	2	00..7F	Vari. Param. 7 MSB	Refer to the Ef. Parameter List	Depend on Vari. Type
				00..7F	Vari. Param. 7 LSB	Refer to the Ef. Parameter List	Depend on Vari. Type
		50	2	00..7F	Vari. Param. 8 MSB	Refer to the Ef. Parameter List	Depend on Vari. Type
				00..7F	Vari. Param. 8 LSB	Refer to the Ef. Parameter List	Depend on Vari. Type
		52	2	00..7F	Vari. Param. 9 MSB	Refer to the Ef. Parameter List	Depend on Vari. Type
				00..7F	Vari. Param. 9 LSB	Refer to the Ef. Parameter List	Depend on Vari. Type
		54	2	00..7F	Vari. Param. 10 MSB	Refer to the Ef. Parameter List	Depend on Vari. Type
				00..7F	Vari. Param. 10 LSB	Refer to the Ef. Parameter List	Depend on Vari. Type
		56	1	00..7F	Variation Return	- ..0..+6dB(0..64..127)	40
		57	1	01..7F	Variation Pan	L63..C..R63(1..64..127)	40
		58	1	00..7F	Send Vari. To Reverb	- ..0..+6dB(0..64..127)	00
		59	1	00..7F	Send Vari. To Chorus	- ..0..+6dB(0..64..127)	00
		5A	1	00..01	Variation Connection	0:insertion,1:system	00
		5B	1	00..7F	Variation Part	part1..16(0..15),AD1(64),off(16..63,65..127)	7F
		5C	1	00..7F	MW Vari. Ctrl Depth	-64..+63	40
		5D	1	00..7F	PB Vari. Ctrl Depth	-64..+63	40
		5E	1	00..7F	CAT Vari. Ctrl Depth	-64..+63	40
		5F	1	00..7F	Not Used		
		60	1	00..7F	Not Used		
TOTAL SIZE 21							
02	01	70	1	00..7F	Variation Parameter 11	option Parameter	Depend on Variation Type
		71	1	00..7F	Variation Parameter 12	option Parameter	Depend on Variation Type
		72	1	00..7F	Variation Parameter 13	option Parameter	Depend on Variation Type
		73	1	00..7F	Variation Parameter 14	option Parameter	Depend on Variation Type
		74	1	00..7F	Variation Parameter 15	option Parameter	Depend on Variation Type
		75	1	00..7F	Variation Parameter 16	option Parameter	Depend on Variation Type
TOTAL SIZE 6							

< Table 1-5 > MIDI Parameter Change table (MULTI EQ)(PSR-740 ONLY)

Address (H)			Size (H)	Data (H)	Prameter Name	Description	Default Value (H)
02	40	00	1	34..4C	EQ Type	0:FLAT 1:JAZZ 2:POPS 3:ROCK 4:CLASSIC	00
		01	1	34..4C	EQ Gain1	-12..+12[dB]	40
		02	1	04..28	EQ Frequency1	32..2000[Hz]	0C
		03	1	01..78	EQ Q1	0.1..12.0	07
		04	1	00..01	EQ Shape1	00:Shelving,01:Peaking	00
		05	1	34..4C	EQ Gain2	-12..+12[dB]	40
		06	1	0E..36	EQ Frequency2	0.1..10[KHz]	1C
		07	1	01..78	EQ Q2	0.1..12.0	07
		08	1		Not Used		
		09	1	34..4C	EQ Gain3	-12..+12[dB]	40
		0A	1	0E..36	EQ Frequency3	0.1..10[KHz]	22
		0B	1	01..78	EQ Q3	0.1..12.0	07
		0C	1		Not Used		
		0D	1	34..4C	EQ Gain4	-12..+12[dB]	40
		0E	1	0E..36	EQ Frequency4	0.1..10[KHz]	2E
		0F	1	01..78	EQ Q4	0.1..12.0	07
		10	1		Not Used		
		11	1	34..4C	EQ Gain5	-12..+12[dB]	40
		12	1	1C..3A	EQ Frequency5	0.5..16.0[KHz]	34
		13	1	01..78	EQ Q5	0.1..12.0	07
		14	1	00..01	EQ Shape5	00:Shelving,01:Peaking	00
TOTAL SIZE 15							

< Table 1-6 > MIDI Parameter change table (Effect2)(PSR-740 ONLY)

Address (H)			Size (H)	Data (H)	Prameter Name	Description	Default Value (H)
03	0n	00	2	00..7F	Insertion Type MSB	Refer to the Ef. Type List “49(=DISTORTION)”	
				00..7F	Insertion Type LSB	00 : basic type	00
		02	1	00..7F	Insertion Parameter1	Refer to the Ef. Parameter List	Depend on Insertion Type
		03	1	00..7F	Insertion Parameter2	Refer to the Ef. Parameter List	Depend on Insertion Type
		04	1	00..7F	Insertion Parameter3	Refer to the Ef. Parameter List	Depend on Insertion Type
		05	1	00..7F	Insertion Parameter4	Refer to the Ef. Parameter List	Depend on Insertion Type
		06	1	00..7F	Insertion Parameter5	Refer to the Ef. Parameter List	Depend on Insertion Type
		07	1	00..7F	Insertion Parameter6	Refer to the Ef. Parameter List	Depend on Insertion Type
		08	1	00..7F	Insertion Parameter7	Refer to the Ef. Parameter List	Depend on Insertion Type
		09	1	00..7F	Insertion Parameter8	Refer to the Ef. Parameter List	Depend on Insertion Type
		0A	1	00..7F	Insertion Parameter9	Refer to the Ef. Parameter List	Depend on Insertion Type
		0B	1	00..7F	Insertion Parameter10	Refer to the Ef. Parameter List	Depend on Insertion Type
		0C	1	00..7F	Insertion Part	Part1..16,OFF	7F
		0D	1	00..7F	MW INS CTRL DPT		40
		0E	1	00..7F	BEND INS CTRL DPT		40
		0F	1	00..7F	CAT INS CTRL DPT		40
		10	1	00..7F	Not Used		
		11	1	00..7F	Not Used		
TOTAL SIZE 12							
03	0n	20	1	00..7F	Insertion Parameter11	Refer to the Ef. Parameter List	Depend on Insertion 1 Type
		21	1	00..7F	Insertion Parameter12	Refer to the Ef. Parameter List	Depend on Insertion 1 Type
		22	1	00..7F	Insertion Parameter13	Refer to the Ef. Parameter List	Depend on Insertion 1 Type
		23	1	00..7F	Insertion Parameter14	Refer to the Ef. Parameter List	Depend on Insertion 1 Type
		24	1	00..7F	Insertion Parameter15	Refer to the Ef. Parameter List	Depend on Insertion 1 Type
		25	1	00..7F	Insertion Parameter16	Refer to the Ef. Parameter List	Depend on Insertion 1 Type
TOTAL SIZE 06							

Address (H)			Size (H)	Data (H)	Prameter Name	Description	Default Value (H)
03	0n	30	2	00..7F	Ins. Param.1 MSB	Refer to the Ef. Parameter List	Depend on Insertion Type
				00..7F	Ins. Param.1 LSB	Refer to the Ef. Parameter List	Depend on Insertion Type
03	0n	32	2	00..7F	Ins. Param.2 MSB	Refer to the Ef. Parameter List	Depend on Insertion Type
				00..7F	Ins. Param.2 LSB	Refer to the Ef. Parameter List	Depend on Insertion Type
03	0n	34	2	00..7F	Ins. Param.3 MSB	Refer to the Ef. Parameter List	Depend on Insertion Type
				00..7F	Ins. Param.3 LSB	Refer to the Ef. Parameter List	Depend on Insertion Type
03	0n	36	2	00..7F	Ins. Param.4 MSB	Refer to the Ef. Parameter List	Depend on Insertion Type
				00..7F	Ins. Param.4 LSB	Refer to the Ef. Parameter List	Depend on Insertion Type
03	0n	38	2	00..7F	Ins. Param.5 MSB	Refer to the Ef. Parameter List	Depend on Insertion Type
				00..7F	Ins. Param.5 LSB	Refer to the Ef. Parameter List	Depend on Insertion Type
03	0n	3A	2	00..7F	Ins. Param.6 MSB	Refer to the Ef. Parameter List	Depend on Insertion Type
				00..7F	Ins. Param.6 LSB	Refer to the Ef. Parameter List	Depend on Insertion Type
03	0n	3C	2	00..7F	Ins. Param.7 MSB	Refer to the Ef. Parameter List	Depend on Insertion Type
				00..7F	Ins. Param.7 LSB	Refer to the Ef. Parameter List	Depend on Insertion Type
03	0n	3E	2	00..7F	Ins. Param.8 MSB	Refer to the Ef. Parameter List	Depend on Insertion Type
				00..7F	Ins. Param.8 LSB	Refer to the Ef. Parameter List	Depend on Insertion Type
03	0n	40	2	00..7F	Ins. Param.9 MSB	Refer to the Ef. Parameter List	Depend on Insertion Type
				00..7F	Ins. Param.9 LSB	Refer to the Ef. Parameter List	Depend on Insertion Type
03	0n	42	2	00..7F	Ins. Param.10 MSB	Refer to the Ef. Parameter List	Depend on Insertion Type
				00..7F	Ins. Param.10 LSB	Refer to the Ef. Parameter List	Depend on Insertion Type

TOTAL SIZE 14

For effect types that do not require MSB, the Parameters for Address 02-0B will be received. Address 30-42 will not be received.
For effect types that require MSB, the Parameters for Address 30-42 will be received. Address 02-0B will not be received.
When Bulk Dumps that include Effect Type data are transmitted, the Parameters for Address 02 - 0B will always be transmitted.
But, effects that require MSB, when the bulk dump is received the Parameters for Address 02 - 0B will not be received.
n=Insertion Effect No.(0-1)

< Table 1-7 > MIDI Parameter Change table (SPECIAL EFFECT) (PSR-740 ONLY)

Address (H)			Size (H)	Data (H)	Prameter Name	Description (H)	Default Value (H)
04	00	00	2	00..7F	Insertion Effect Type MSB	Refer to the Effect Map	49(=DISTORTION)
				00..7F	Insertion Effect Type LSB	00 : basic type	00
		02	1	00..7F	Insertion Effect Parameter1	Refer to the Ef. Parameter List	depends on insertion 1 type
		03	1	00..7F	Insertion Effect Parameter2	Refer to the Ef. Parameter List	depends on insertion 1 type
		04	1	00..7F	Insertion Effect Parameter3	Refer to the Ef. Parameter List	depends on insertion 1 type
		05	1	00..7F	Insertion Effect Parameter4	Refer to the Ef. Parameter List	depends on insertion 1 type
		06	1	00..7F	Insertion Effect Parameter5	Refer to the Ef. Parameter List	depends on insertion 1 type
		07	1	00..7F	Insertion Effect Parameter6	Refer to the Ef. Parameter List	depends on insertion 1 type
		08	1	00..7F	Insertion Effect Parameter7	Refer to the Ef. Parameter List	depends on insertion 1 type
		09	1	00..7F	Insertion Effect Parameter8	Refer to the Ef. Parameter List	depends on insertion 1 type
		0A	1	00..7F	Insertion Effect Parameter9	Refer to the Ef. Parameter List	depends on insertion 1 type
		0B	1	00..7F	Insertion Effect Parameter10	Refer to the Ef. Parameter List	depends on insertion 1 type
		0C	1	00..7F	Insertion Effect Part	Part1...16(0...15) AD1(64) Off(16...63, 65...127)	7F
		0D	1	00..7F	Not Used		
		0E	1	00..7F	Not Used		
		0F	1	00..7F	Not Used		
		10	1	00..7F	Not Used		
		11	1	00..7F	Not Used		

TOTAL SIZE 12

04	00	14	1	00..7F	Unique Insertion Effect External Control CH1(Harmony Channel)	1...16(0...15) Off(127)	7F
		15	1	00..7F	Unique Insertion Effect External Control CH2(Melody Channel)	1...16(0...15) Off(127)	7F

TOTAL SIZE 2

04	00	20	1	00..7F	Insertion Effect Parameter11	Refer to the Ef. Parameter List	depends on insertion 1 type
		21	1	00..7F	Insertion Effect Parameter12	Refer to the Ef. Parameter List	depends on insertion 1 type
		22	1	00..7F	Insertion Effect Parameter13	Refer to the Ef. Parameter List	depends on insertion 1 type
		23	1	00..7F	Insertion Effect Parameter14	Refer to the Ef. Parameter List	depends on insertion 1 type
		24	1	00..7F	Insertion Effect Parameter15	Refer to the Ef. Parameter List	depends on insertion 1 type
		25	1	00..7F	Insertion Effect Parameter16	Refer to the Ef. Parameter List	depends on insertion 1 type

TOTAL SIZE 6

< Table 1-8 > MIDI Parameter Change table (MULTI PART)

Address (H)			Size (H)	Data (H)	Prameter Name	Description	Default Value (H)
08	nn	00	1	00..20	Element Reserve	0..32	0(Part10),2(Others)
	nn	01	1	00..7F	Bank Select MSB	0..127	7F(Part10),00(Others)
	nn	02	1	00..7F	Bank Select LSB	0..127	00
	nn	03	1	00..7F	Program Number	1..128	00
	nn	04	1	00..0F, 7F	Rcv Channel	0..16;1..16,127;off	Part No.
	nn	05	1	00..01	Mono/Poly Mode	0:mono,1:poly	01
	nn	06	1	00..02	Same Note Number Key On Assign	0:single 1:multi 2:inst (for DRUM)	00
	nn	07	1	00..03	Part Mode	0:normal 1..3:drum thru,drum1..2	00 (Except Part10) 02 (Part10)
	nn	08	1	28..58	Note Shift	-24..+24[semitones]	40
	nn	09	2	00..FF	Detune	-12.8..+12.7[Hz]	08 00
	nn	0A				1st bit3..0 → bit7..4 2nd bit3..0 → bit3..0	(80)
	nn	0B	1	00..7F	Volume	0..127	64
	nn	0C	1	00..7F	Velocity Sense Depth	0..127	40
	nn	0D	1	00..7F	Velocity Sense Offset	0..127	40
	nn	0E	1	00..7F	Pan	0:random L63..C..R63(1..64..127)	40
	nn	0F	1	00..7F	Note Limit Low	C-2..G8	00
	nn	10	1	00..7F	Note Limit High	C-2..G8	7F
	nn	11	1	00..7F	Dry Level	0..127	7F
	nn	12	1	00..7F	Chorus Send	0..127	00
	nn	13	1	00..7F	Reverb Send	0..127	28
	nn	14	1	00..7F	Variation Send	0..127	00
	nn	15	1	00..7F	Vibrato Rate	-64..+63	40
	nn	16	1	00..7F	Vibrato Depth	-64..+63	40
	nn	17	1	00..7F	Vibrato Delay	-64..+63	40
	nn	18	1	00..7F	Filter Cutoff Freq.	-64..+63	40
	nn	19	1	00..7F	Filter Resonance	-64..+63	40
	nn	1A	1	00..7F	EG Attack Time	-64..+63	40
	nn	1B	1	00..7F	EG Decay Time	-64..+63	40
	nn	1C	1	00..7F	EG Release Time	-64..+63	40

Address (H)			Size (H)	Data (H)	Prameter Name	Description	Default Value (H)
nn	1D		1	28..58	MW Pitch Control	-24..+24[semitones]	40
nn	1E		1	00..7F	MW Filter Control	-9600..+9450[cent]	40
nn	1F		1	00..7F	MW Amp. Control	-100..+100[%]	40
nn	20		1	00..7F	MW LFO PMod Depth	0..127	0A
nn	21		1	00..7F	MW LFO FMod Depth	0..127	00
nn	22		1	00..7F	MW LFO AMod Depth	0..127	00
nn	23		1	28..58	Bend Pitch Control	-24..+24[semitones]	42
nn	24		1	00..7F	Bend Filter Control	-9600..+9450[cent]	40
nn	25		1	00..7F	Bend Amp. Control	-100..+100[%]	40
nn	26		1	00..7F	Bend LFO PMod Depth	0..127	00
nn	27		1	00..7F	Bend LFO FMod Depth	0..127	00
nn	28		1	00..7F	Bend LFO AMod Depth	0..127	00
TOTAL SIZE 29							
nn	30				Not Used		
	:				:		
nn	40				Not Used		
nn	41		1	00..7F	Scale Tuning C	-64..+63[cent]	40
nn	42		1	00..7F	Scale Tuning C#	-64..+63[cent]	40
nn	43		1	00..7F	Scale Tuning D	-64..+63[cent]	40
nn	44		1	00..7F	Scale Tuning D#	-64..+63[cent]	40
nn	45		1	00..7F	Scale Tuning E	-64..+63[cent]	40
nn	46		1	00..7F	Scale Tuning F	-64..+63[cent]	40
nn	47		1	00..7F	Scale Tuning F#	-64..+63[cent]	40
nn	48		1	00..7F	Scale Tuning G	-64..+63[cent]	40
nn	49		1	00..7F	Scale Tuning G#	-64..+63[cent]	40
nn	4A		1	00..7F	Scale Tuning A	-64..+63[cent]	40
nn	4B		1	00..7F	Scale Tuning A#	-64..+63[cent]	40
nn	4C		1	00..7F	Scale Tuning B	-64..+63[cent]	40
nn	4D		1	28..58	CAT Pitch Control	-24..+24[semitones]	40
nn	4E		1	00..7F	CAT Filter Control	-9600..+9450[cent]	40
nn	4F		1	00..7F	CAT Amplitude Control	-100..+100[%]	40
nn	50		1	00..7F	CAT LFO PMod Depth	0..127	00
nn	51		1	00..7F	CAT LFO FMod Depth	0..127	00
nn	52		1	00..7F	CAT LFO AMod Depth	0..127	00
nn	53				Not Used		
	:				:		
	66				Not Used		
nn	67		1	00..01	Portamento Switch	off/on	00
nn	68		1	00..7F	Portamento Time	0..127	00
nn	69				Not Used		
	:				:		
	6E				Not Used		
TOTAL SIZE 3F							

nn = PartNumber

If there is a Drum Voice assigned to the Part, the following parameters are ineffective.
- Bank Select LSB
- Soft Pedal
- Pitch EG
- Mono/Poly
- Portamento
- Scale Tuning

< Table 1-9 > MIDI Parameter Change table (A/D PART) (PSR-740 ONLY)

Address (H)			Size (H)	Data (H)	Prameter Name	Description	Default Value (H)
10	nn	00	1		Not Use		
		01	1		Not Use		
		02	1		Not Use		
		03	1		Not Use		
		04	1	00..0F, 7F	Rcv Channel	A1...A16, OFF	7F
		05	1		Not Use		
		:					
		0A	1		Not Use		
		0B	1	00..7F	Volume	0...127	00
		0C	1		Not Use		
		0D	1		Not Use		
		0E	1	01...7F	Pan	L63...C...R63 (1...127)	40
		0F	1		Not Use		
		10	1		Not Use		
		11	1	00..7F	Dry Level	0...127	7F
		12	1	00..7F	Chorus Send	0...127	00
		13	1	00..7F	Reverb Send	0...127	00
		14	1	00..7F	Variation Send	0...127	00
TOTAL SIZE 15							

< Table 1-10 > MIDI Parameter Change table (DRUM SETUP)

Address (H)			Size (H)	Data (H)	Prameter Name	Description (H)	Default Value (H)
3n	rr	00	1	00..7F	Pitch Coarse	-64..+63	40
3n	rr	01	1	00..7F	Pitch Fine	-64..+63[cent]	40
3n	rr	02	1	00..7F	Level	0..127	Depend on the Note
3n	rr	03	1	00..7F	Alternate Group	0:off,1..127	Depend on the Note
3n	rr	04	1	00..7F	Pan	0:random L63..C..R63(1..64..127)	Depend on the Note
3n	rr	05	1	00..7F	Reverb Send Level	0..127	Depend on the Note
3n	rr	06	1	00..7F	Chorus Send Level	0..127	Depend on the Note
3n	rr	07	1	00..7F	Variation Send Level	0..127	7F
3n	rr	08	1	00..01	Key Assign	0:single,1:multi	00
3n	rr	09	1	00..01	Rcv Note Off	off/on	Depend on the Note
3n	rr	0A	1	00..01	Rcv Note On	off/on	01
3n	rr	0B	1	00..7F	Filter Cutoff Freq.	-64..63	40
3n	rr	0C	1	00..7F	Filter Resonance	-64..63	40
3n	rr	0D	1	00..7F	EG Attack Rate	-64..63	40
3n	rr	0E	1	00..7F	EG Decay1 Rate	-64..63	40
3n	rr	0F	1	00..7F	EG Decay2 Rate	-64..63	40
TOTAL SIZE 10							

n:Drum Setup Number(0 - 1)
rr:note number(0DH - 5BH)
If XG SYSTEM ON and/or GM On message is received, all Drum Setup Parameter will be reset to default values.
According to the Drum Setup Reset message, individual Drum Setup Parameters can be reset to default values.

< Table 1-11 > Effect Type List

XG ESSENTIAL EFFECT
Same as LSB=0
XG OPTION EFFECT
XG OPTION EFFECT(Only PSR-740)
Expanded type for PSR-740/640

* If the received value does not contain an effect type in the TYPE LSB, the LSB will be directed to TYPE 0.
* Panel Effects are based on the "[Number] Effect Name".

REVERB TYPE (PSR-740/640)

TYPE MSB		TYPE LSB										
DEC	HEX	00	01	02	03...07	08	09...15	16	17	18	19	20
000	00	NO EFFECT										
001	01	[1]HALL1	[5]HALL2					[2]HALL2	[3]HALL3	[4]HALL4		
002	02	[10]ROOM1	[11]ROOM2	[12]ROOM3				[6]ROOM1	[7]ROOM2	[8]ROOM3	[9]ROOM4	
003	03	[15]STAGE1	[16]STAGE2					[13]STAGE1	[14]STAGE2			
004	04	[19]PLATE						[17]PLATE1	[18]PLATE2			
005	05	NO EFFECT										
:	:	:										
015	0F	NO EFFECT										
016	10	[20]WHITE ROOM										
017	11	[21]TUNNEL										
018	12	[22]CANYON										
019	13	[23]BASEMENT										
020	14	NO EFFECT										
:	:	:										
127	7F	NO EFFECT										

CHORUS TYPE (PSR-740/640)

TYPE MSB		TYPE LSB										
DEC	HEX	00	01	02	03...07	08	09...15	16	17	18	19	20
000	00	NO EFFECT										
001	01	NO EFFECT										
:	:	:										
064	40	NO EFFECT										
065	41	[6]CHORUS1	[7]CHORUS2	[5]CHORUS5		[8]CHORUS4						
066	42	[9]CELESTE1	[4]CHORUS4	[10]CELESTE3		[2]CHORUS2		[3]CHORUS3	[1]CHORUS1			
067	43	[15]FLANGER 1	[14]FLANGER4			[11]FLANGER1		[12]FLANGER2	[13]FLANGER3			
068	44	[17]SYMPHONIC (PSR-740)						[16]Symphonic (PSR-740)				
069	45	NO EFFECT										
:	:	:										
071	47	NO EFFECT										
072	48	[18]PHASER 1 (PSR-740)										
073	49	NO EFFECT										
:	:	:										
086	56	NO EFFECT										
087	57	[19]ENSEMBLE DETUNE(PSR-740)										
088	58	NO EFFECT										
:	:	:										
127	7F	NO EFFECT										

VARIATION TYPE (0-63) (PSR-640)

TYPE MSB		TYPE LSB										
DEC	HEX	00	01	02	03...07	08	09...15	16	17	18	19	20
000	00	NO EFFECT										
001	01	[1]HALL1	[5]HALL2					[2]HALL2	[3]HALL3	[4]HALL4		
002	02	[10]ROOM1	[11]ROOM2	[12]ROOM3				[6]ROOM1	[7]ROOM2	[8]ROOM3	[9]ROOM4	
003	03	[15]STAGE1	[16]STAGE2					[13]STAGE1	[14]STAGE2			
004	04	[19]PLATE						[17]PLATE1	[18]PLATE2			
005	05	[21]DELAY L,C,R						[20]Delay LCR				
006	06	[22]DELAY L,R										
007	07	[23]ECHO										
008	08	[24]CROSS DELAY										
009	09	[25]ER1	[26]ER2									
010	0A	[27]GATE REVERB										
011	0B	[28]REVERS GATE										
012	0C	NO EFFECT or THRU*										
:	:	:										
019	13	NO EFFECT or THRU*										
020	14	[29]KARAOKE 1	[30]KARAOKE 2	[31]KARAOKE 3								
021	15	NO EFFECT or THRU*										
:	:	:										
063	3F	NO EFFECT or THRU*										

* No effect when Effect Connection = System.
  Through when Effect Connection = Insertion.

VARIATION TYPE (64-127) (PSR-640)

TYPE MSB		TYPE LSB										
DEC	HEX	00	01	02	03...07	08	09...15	16	17	18	19	20
064	40	THRU										
065	41	[37]CHORUS1	[38]CHORUS2	[36]CHORUS5		[39]CHORUS4						
066	42	[40]CELESTE1	[35]CHORUS4	[41]CELESTE3		[33]CHORUS2		[34]CHORUS3	[32]CHORUS1	[53]Rotary Sp5		
067	43	[46]FLANGER 1	[45]FLANGER 4			[42]FLANGER1		[43]FLANGER2	[44]FLANGER3			
068	44	[48]SYMPHONIC						[47]Symphonic				
069	45	[54]ROTARY SP.						[49]Rotary Sp1				
070	46	[57]TREMOLO						[55]Tremolo1	[52]Rotary Sp4			
071	47	[60]AUTO PAN						[59]AutoPan	[50]Rotary Sp2	[51]Rotary Sp3	[56]Tremolo2	[58]Gtr Tremolo
072	48	[61]PHASER				[62]PHASER 2						
073	49	[65]DISTORTION										
074	4A	[66]OVER DRIVE										
075	4B	[67]AMP SIM.						[63]DIST.HARD	[64]DIST.SOFT			
076	4C	[70]3BAND EQ						[68]EQ DISCO	[69]EQ TEL			
077	4D	[71]2BAND EQ										
078	4E	[73]AUTO WAH						[72]Auto Wah				
079	4F	NO EFFECT or THRU*										
:	:	:										
127	7F	NO EFFECT or THRU*										

* No effect when Effect Connection = System.
  Through when Effect Connection = Insertion.

VARIATION TYPE (0-63) (PSR-740)

TYPE MSB		TYPE LSB											
DEC	HEX	00	01	02	03...07	08	09...15	16	17	18	19	20
000	00	NO EFFECT										
001	01	[1]HALL1	[5]HALL2					[2]HALL2	[3]HALL3	[4]HALL4		
002	02	[10]ROOM1	[11]ROOM2	[12]ROOM3				[6]ROOM1	[7]ROOM2	[8]ROOM3	[9]ROOM4	
003	03	[15]STAGE1	[16]STAGE2					[13]STAGE1	[14]STAGE2			
004	04	[19]PLATE						[17]PLATE1	[18]PLATE2			
005	05	[21]DELAY L,C,R						[20]Delay LCR				
006	06	[22]DELAY L,R										
007	07	[23]ECHO										
008	08	[24]CROSS DELAY										
009	09	[25]ER1	[26]ER2									
010	0A	[27]GATE REVERB										
011	0B	[28]REVERS GATE										
012	0C	NO EFFECT or THRU*										
:	:	:										
015	0F	NO EFFECT or THRU*										
016	10	[29]WHITE ROOM										
017	11	[30]TUNNEL										
018	12	[31]CANYON										
019	13	[32]BASEMENT										
020	14	[33]KARAOKE 1	[34]KARAOKE 2	[35]KARAOKE 3								
021	15	NO EFFECT or THRU*										
:	:	:										
063	3F	NO EFFECT or THRU*										

* No effect when Effect Connection = System.
Through when Effect Connection = Insertion.

VARIATION TYPE (64-127) (PSR-740)

TYPE MSB		TYPE LSB										
DEC	HEX	00	01	02	03...07	08	09...15	16	17	18	19	20
064	40	THRU										
065	41	[41]CHORUS1	[42]CHORUS2	[40]CHORUS5		[43]CHORUS4						
066	42	[44]CELESTE1	[39]CHORUS4	[45]CELESTE3		[37]CHORUS2		[38]CHORUS3	[36]CHORUS1	[57]Rotary Sp5		
067	43	[50]FLANGER 1	[49]FLANGER 4			[46]FLANGER1		[47]FLANGER2	[48]FLANGER3			
068	44	[52]SYMPHONIC						[51]Symphonic				
069	45	[58]ROTARY SP.						[53]Rotary Sp1				
070	46	[62]TREMOLO						[60]Tremolo1	[56]Rotary Sp4			
071	47	[65]AUTO PAN						[64]AutoPan	[54]Rotary Sp2	[55]Rotary Sp3	[61]Tremolo2	[63]Gtr Tremolo
072	48	[66]PHASER				[67]PHASER 2						
073	49	[70]DISTORTION	[72]COMP +DISTORTION									
074	4A	[71]OVER DRIVE										
075	4B	[73]AMP SIM.						[68]DIST.HARD	[69]DIST.SOFT			
076	4C	[76]3BAND EQ						[74]EQ DISCO	[75]EQ TEL			
077	4D	[77]2BAND EQ										
078	4E	[79]AUTO WAH	[82]AUTO WAH +DIST	[83]AUTO WAH +OVERDRIVE				[78]Auto Wah				
079	4F	THRU										
080	50	[89]PITCH CHANGE1	[90]PITCH CHANGE2									
081	51	[84]HARMONIC ENHANCER										
082	52	[80]TOUCH WAH 1	[85]TOUCH WAH +DIST	[86]TOUCH WAH +OVERDRIVE		[81]TOUCH WAH 2						
083	53	[87]COMPRESSOR										
084	54	[88]NOISE GATE										
085	55	[91]VOICE CANCEL										
086	56	[59]2WAY ROTARY SP										
087	57	[92]ENSEMBLE DETUNE										
088	58	[93]AMBIENCE										
089	59	THRU										
:	:	:										
092	5C	THRU										
093	5D	[94]TALKING MODULATOR										
094	5E	[95]LO-FI										
095	5F	[96]DIST+DELAY	[97]OVERDRIVE +DELAY									
096	60	[98]COMP+DIST +DELAY	[99]COMP +OVERDRIVE +DELAY									
097	61	[100]WAH+DIST +DELAY	[101]WAH +OVERDRIVE +DELAY									
098	62	THRU										
:	:	:										
127	7F	THRU										

INSERTION TYPE (PSR-740)

TYPE MSB		TYPE LSB										
DEC	HEX	00	01	02	03...07	08	09...15	16	17	18	19	20
000	0	THRU										
001	1	[1]HALL 1	[5]HALL 2					[2]HALL2	[3]HALL3	[4]HALL4		
002	2	[10]ROOM 1	[11]ROOM 2	[12]ROOM 3				[6]ROOM1	[7]ROOM2	[8]ROOM3	[9]ROOM4	
003	3	[15]STAGE 1	[16]STAGE 2					[13]STAGE1	[14]STAGE2			
004	4	[19]PLATE						[17]PLATE1	[18]PLATE2			
005	5	[21]DELAY L,C,R						[20]Delay LCR				
006	6	[22]DELAY L,R										
007	7	[23]ECHO										
008	8	[24]CROSS DELAY										
009	9	THRU										
:	:	:										
019	13	THRU										
020	14	[25]KARAOKE 1	[26]KARAOKE 2	[27]KARAOKE 3								
021	15	THRU										
:	:	:										
064	40	THRU										
065	41	[33]CHORUS 1	[34]CHORUS 2	[32]CHORUS 3		[35]CHORUS 4						
066	42	[36]CELESTE 1	[31]CELESTE 2	[37]CELESTE 3		[29]CELESTE 4		[30]CHORUS3	[28]CHORUS1	[49]Rotary Sp5		
067	43	[42]FLANGER 1	[41]FLANGER 2			[38]FLANGER 3		[39]FLANGER2	[40]FLANGER3			
068	44	[44]SYMPHONIC						[43]Symphonic				
069	45	[50]ROTARY SPEAKER 1						[45]Rotary Sp1				
070	46	[53]TREMOLO						[51]Tremolo1	[48]Rotary Sp4			
071	47	[56]AUTO PAN						[55]AutoPan	[46]Rotary Sp2	[47]Rotary Sp3	[52]Tremolo2	[54]Gtr Tremolo
072	48	[57]PHASER 1										
073	49	[60]DISTORTION										
074	4A	[61]OVER DRIVE										
075	4B	[62]AMP SIMULATOR						[58]DIST.HARD	[59]DIST.SOFT			
076	4C	[65]3-BAND EQ						[63]EQ DISCO	[64]EQ TEL			
077	4D	[66]2-BAND EQ										
078	4E	[68]AUTO WAH(LFO)						[67]Auto Wah				
079	4F	THRU										
080	50	THRU										
081	51	[69]HARMONIC ENHANCER										
082	52	[70]TOUCH WAH 1				[71]TOUCH WAH 2						
083	53	[72]COMPRESSOR										
084	54	[73]NOISE GATE										
085	55	THRU										
086	56	THRU										
087	57	[74]ENSEMBLE DETUNE										
088	58	THRU										
:	:	:										
127	7F	THRU										

< Table 1-12 > Effect Parameter List

HALL1,HALL2, ROOM1,ROOM2,ROOM3, STAGE1,STAGE2, PLATE (reverb, variation, insertion block)

No.	Parameter	Display	Value	See Table	Comment	Control
1	Reverb Time	0.3-30.0s	0-69	table#4		
2	Diffusion	0-10	0-10			
3	Initial Delay	0.1mS-99.3mS	0-63	table#5		
4	HPF Cutoff	Thru-8.0kHz	0-52	table#3		
5	LPF Cutoff	1.0k-Thru	34-60	table#3		
6						
7						
8						
9						
10	Dry/Wet	D63>W - D=W - D<W63	1-127			●
11	Rev Delay	0.1mS-99.3mS	0-63	table#5		
12	Density	0-4 (reverb, variation block)	0-4		PSR-740	
		0-4 (reverb, variation block)	0-3		PSR-640	
		0-2 (insertion block)	0-2			
13	Er/Rev Balance	E63>R - E=R - E<R63	1-127			
14	High Damp	0.1-1.0	1-10			
15	Feedback Level	-63-+63	1-127			
16						

WHITE ROOM, TUNNEL, CANYON, BASEMENT (reverb, variation block)

No.	Parameter	Display	Value	See Table	Comment	Control
1	Reverb Time	0.3-30.0s	0-69	table#4		
2	Diffusion	0-10	0-10			
3	Initial Delay	0.1mS-99.3mS	0-63	table#5		
4	HPF Cutoff	Thru-8.0kHz	0-52	table#3		
5	LPF Cutoff	1.0k-Thru	34-60	table#3		
6	Width	0.5-10.2m	0-37	table#11		
7	Heigt	0.5-20.2m	0-73	table#11		
8	Depth	0.5-30.2m	0-104	table#11		
9	Wall Vary	0-30	0-30			
10	Dry/Wet	D63>W - D=W - D<W63	1-127			●
11	Rev Delay	0.1mS-99.3mS	0-63	table#5		
12	Density	0-4	0-4		PSR-740	
		0-4	0-3		PSR-640	
13	Er/Rev Balance	E63>R - E=R - E<R63	1-127			
14	High Damp	0.1-1.0	1-10		PSR-740 only	
15	Feedback Level	-63-+63	1-127			
16						

DELAY L,C,R (variation, insertion block)

No.	Parameter	Display	Value	See Table	Comment	Control
1	Lch Delay	0.1-715.0ms (variation block)	1-7150			
		0.1-715.0ms (Insertion block)	1-7150			
2	Rch Delay	0.1-715.0ms (variation block)	1-7150			
		0.1-715.0ms (Insertion block)	1-7150			
3	Cch Delay	0.1-715.0ms (variation block)	1-7150			
		0.1-715.0ms (Insertion block)	1-7150			
4	Feedback Delay	0.1-715.0ms (variation block)	1-7150			
		0.1-715.0ms (Insertion block)	1-7150			
5	Feedback Level	-63-+63	1-127			
6	Cch Level	0-127	0-127			
7	High Damp	0.1-1.0	1-10			
8						
9						
10	Dry/Wet	D63>W - D=W - D<W63	1-127			●
11						
12						
13	EQ Low Frequency	32Hz-2.0kHz	4-40	table#3	PSR-740	
		50Hz-2.0kHz	8-40	table#3	PSR-640	
14	EQ Low Gain	-12-+12dB	52-76			
15	EQ High Frequency	500Hz-16.0kHz	28-58	table#3		
16	EQ High Gain	-12-+12dB	52-76			

DELAY L,R (variation, insertion block)

No.	Parameter	Display	Value	See Table	Comment	Control
1	Lch Delay	0.1-715.0ms (variation block)	1-7150			
		0.1-715.0ms (Insertion block)	1-7150			
2	Rch Delay	0.1-715.0ms (variation block)	1-7150			
		0.1-715.0ms (Insertion block)	1-7150			
3	Feedback Delay 1	0.1-715.0ms (variation block)	1-7150			
		0.1-715.0ms (Insertion block)	1-7150			
4	Feedback Delay 2	0.1-715.0ms (variation block)	1-7150			
		0.1-715.0ms (Insertion block)	1-7150			
5	Feedback Level	-63-+63	1-127			
6	High Damp	0.1-1.0	1-10			
7						
8						
9						
10	Dry/Wet	D63>W - D=W - D<W63	1-127			●
11						
12						
13	EQ Low Frequency	32Hz-2.0kHz	4-40	table#3	PSR-740	
		50Hz-2.0kHz	8-40	table#3	PSR-640	
14	EQ Low Gain	-12-+12dB	52-76			
15	EQ High Frequency	500Hz-16.0kHz	28-58	table#3		
16	EQ High Gain	-12-+12dB	52-76			

ECHO (variation, insertion block)

No.	Parameter	Display	Value	See Table	Comment	Control
1	Lch Delay1	0.1-355.0ms (variation block)	1-3550			
		0.1-355.0ms (insertion block)	1-3550			
2	Lch Feedback Level	-63-+63	1-127			
3	Rch Delay1	0.1-355.0ms (variation block)	1-3550			
		0.1-355.0ms (insertion block)	1-3550			
4	Rch Feedback Level	-63-+63	1-127			
5	High Damp	0.1-1.0	1-10			
6	Lch Delay2	0.1-355.0ms (variation block)	1-3550			
		0.1-355.0ms (insertion block)	1-3550			
7	Rch Delay2	0.1-355.0ms (variation block)	1-3550			
		0.1-355.0ms (insertion block)	1-3550			
8	Delay2 Level	0-127	0-127			
9						
10	Dry/Wet	D63>W - D=W - D<W63	1-127			●
11						
12						
13	EQ Low Frequency	32Hz-2.0kHz	4-40	table#3	PSR-740	
		50Hz-2.0kHz	8-40	table#3	PSR-640	
14	EQ Low Gain	-12-+12dB	52-76			
15	EQ High Frequency	500Hz-16.0kHz	28-58	table#3		
16	EQ High Gain	-12-+12dB	52-76			

CROSS DELAY (variation, insertion block)

No.	Parameter	Display	Value	See Table	Comment	Control
1	L->R Delay	0.1-355.0ms (variation block)	1-3550			
		0.1-355.0ms (insertion block)	1-3550			
2	R->L Delay	0.1-355.0ms (variation block)	1-3550			
		0.1-355.0ms (insertion block)	1-3550			
3	Feedback Level	-63-+63	1-127			
4	Input Select	L,R,L&R	0-2			
5	High Damp	0.1-1.0	1-10			
6						
7						
8						
9						
10	Dry/Wet	D63>W - D=W - D<W63	1-127			●
11						
12						
13	EQ Low Frequency	32Hz-2.0kHz	4-40	table#3	PSR-740	
		50Hz-2.0kHz	8-40	table#3	PSR-640	
14	EQ Low Gain	-12-+12dB	52-76			
15	EQ High Frequency	500Hz-16.0kHz	28-58	table#3		
16	EQ High Gain	-12-+12dB	52-76			

EARLY REF1,EARLY REF2(variation block)

No.	Parameter	Display	Value	See Table	Comment	Control
1	Type	S-H, L-H, Rdm, Rvs, Plt, Spr	0-5			
2	Room Size	0.1-7.0	0-44	table#6		
3	Diffusion	0-10	0-10			
4	Initial Delay	0.1mS-99.3mS	0-63	table#5		
5	Feedback Level	-63-+63	1-127			
6	HPF Cutoff	Thru-8.0kHz	0-52	table#3		
7	LPF Cutoff	1.0k-Thru	34-60	table#3		
8						
9						
10	Dry/Wet	D63>W - D=W - D<W63	1-127			●
11	Liveness	0-10	0-10			
12	Density	0-3	0-3			
13	High Damp	0.1-1.0	1-10			
14						
15						
16						

GATE REVERB, REVERSE GATE (variation block)

No.	Parameter	Display	Value	See Table	Comment	Control
1	Type	TypeA,TypeB	0-1			
2	Room Size	0.1-20.0	0-127	table#6		
3	Diffusion	0-10	0-10			
4	Initial Delay	0.1mS-200.0mS	0-127	table#5		
5	Feedback Level	-63-+63	1-127			
6	HPF Cutoff	Thru-8.0kHz	0-52	table#3		
7	LPF Cutoff	1.0k-Thru	34-60	table#3		
8						
9						
10	Dry/Wet	D63>W - D=W - D<W63	1-127			●
11	Liveness	0-10	0-10			
12	Density	0-3	0-3			
13	High Damp	0.1-1.0	1-10			
14						
15						
16						

KARAOKE1,2,3 (variation, insertion block)

No.	Parameter	Display	Value	See Table	Comment	Control
1	Delay Time	0.1mS-400.0mS	0-127	table#7		
2	Feedback Level	-63-+63	1-127			
3	HPF Cutoff	Thru-8.0kHz	0-52	table#3		
4	LPF Cutoff	1.0k-Thru	34-60	table#3		
5						
6						
7						
8						
9						
10	Dry/Wet	D63>W - D=W - D<W63	1-127			●
11						
12						
13						
14						
15						
16						

CHORUS1,2,3,4, CELESTE1,2,3,4 (chorus, variation, insertion block)

No.	Parameter	Display	Value	See Table	Comment	Control
1	LFO Frequency	0.00Hz-39.7Hz	0-127	table#1		
2	LFO Depth	0-127	0-127			
3	Feedback Level	-63-+63	1-127			
4	Delay Offset	0.0mS-50mS	0-127	table#2		
5						
6	EQ Low Frequency	32Hz-2.0kHz	4-40	table#3	PSR-740	
		50Hz-2.0kHz	8-40	table#3	PSR-640	
7	EQ Low Gain	-12-+12dB	52-76			
8	EQ High Frequency	500Hz-16.0kHz	28-58	table#3		
9	EQ High Gain	-12-+12dB	52-76			
10	Dry/Wet	D63>W - D=W - D<W63	1-127			●
11	EQ Mid Frequency	100Hz-10.0kHz (variation block)	14-54	table#3	PSR-740 only	
12	EQ Mid Gain	-12-+12dB (variation block)	52-76		PSR-740 only	
13	EQ Mid Width	1.0-12.0 (variation block)	10-120		PSR-740 only	
14						
15	Input Mode	mono/stereo	0-1			
16						

FLANGER1,2,3 (chorus, variation, insertion block)

No.	Parameter	Display	Value	See Table	Comment	Control
1	LFO Frequency	0.00Hz-39.7Hz	0-127	table#1		
2	LFO Depth	0-127	0-127			
3	Feedback Level	-63-+63	1-127			
4	Delay Offset	0.0mS-50mS	0-127	table#2		
5						
6	EQ Low Frequency	32Hz-2.0kHz	4-40	table#3	PSR-740	
		50Hz-2.0kHz	8-40	table#3	PSR-640	
7	EQ Low Gain	-12-+12dB	52-76			
8	EQ High Frequency	500Hz-16.0kHz	28-58	table#3		
9	EQ High Gain	-12-+12dB	52-76			
10	Dry/Wet	D63>W - D=W - D<W63	1-127			●
11	EQ Mid Frequency	100Hz-10.0kHz (variation block)	14-54	table#3	PSR-740 only	
12	EQ Mid Gain	-12-+12dB (variation block)	52-76		PSR-740 only	
13	EQ Mid Width	1.0-12.0 (variation block)	10-120		PSR-740 only	
14	LFO Phase Difference	-180-+180deg(resolution=3deg)	4-124			
15						
16						

SYMPHONIC (chorus, variation, insertion block)

No.	Parameter	Display	Value	See Table	Comment	Control
1	LFO Frequency	0.00Hz-39.7Hz	0-127	table#1		
2	LFO Depth	0-127	0-127			
3	Delay Offset	0.0mS-50mS	0-127	table#2		
4						
5						
6	EQ Low Frequency	32Hz-2.0kHz	4-40	table#3	PSR-740	
		50Hz-2.0kHz	8-40	table#3	PSR-640	
7	EQ Low Gain	-12-+12dB	52-76			
8	EQ High Frequency	500Hz-16.0kHz	28-58	table#3		
9	EQ High Gain	-12-+12dB	52-76			
10	Dry/Wet	D63>W - D=W - D<W63	1-127			●
11	EQ Mid Frequency	100Hz-10.0kHz (variation block)	14-54	table#3	PSR-740 only	
12	EQ Mid Gain	-12-+12dB (variation block)	52-76		PSR-740 only	
13	EQ Mid Width	1.0-12.0 (variation block)	10-120		PSR-740 only	
14						
15						
16						

ENSEMBLE DETUNE (chorus, variation, insertion block)

No.	Parameter	Display	Value	See Table	Comment	Control
1	Detune	-50-+50cent	14-114			
2	Lch Init Delay	0.0mS-50mS	0-127	table#2		
3	Rch Init Delay	0.0mS-50mS	0-127	table#2		
4						
5						
6						
7						
8						
9						
10	Dry/Wet	D63>W - D=W - D<W63	1-127			●
11	EQ Low Frequency	32Hz-2.0kHz (variation, insertion block)	4-40	table#3		
12	EQ Low Gain	-12-+12dB (variation, insertion block)	52-76			
13	EQ High Frequency	500Hz-16.0kHz (variation, insertion block)	28-58	table#3		
14	EQ High Gain	-12-+12dB (variation, insertion block)	52-76			
15						
16						

AMBIENCE (variation block)

No.	Parameter	Display	Value	See Table	Comment	Control
1	Delay Time	0.0mS-50mS	0-127	table#2		
2	Output Phase	normal/invers	0-1			
3						
4						
5						
6	EQ Low Frequency	32Hz-2.0kHz	4-40	table#3		
7	EQ Low Gain	-12-+12dB	52-76			
8	EQ High Frequency	500Hz-16.0kHz	28-58	table#3		
9	EQ High Gain	-12-+12dB	52-76			
10	Dry/Wet	D63>W - D=W - D<W63	1-127			●
11						
12						
13						
14						
15						
16						

ROTARY SPEAKER (variation, insertion block)

No.	Parameter	Display	Value	See Table	Comment	Control
1	LFO Frequency	0.00Hz-39.7Hz	0-127	table#1		●
2	LFO Depth	0-127	0-127			
3						
4						
5						
6	EQ Low Frequency	32Hz-2.0kHz	4-40	table#3	PSR-740	
		50Hz-2.0kHz	8-40	table#3	PSR-640	
7	EQ Low Gain	-12-+12dB	52-76			
8	EQ High Frequency	500Hz-16.0kHz	28-58	table#3		
9	EQ High Gain	-12-+12dB	52-76			
10	Dry/Wet	D63>W - D=W - D<W63	1-127			
11	EQ Mid Frequency	100Hz-10.0kHz (variation block)	14-54	table#3	PSR-740 only	
12	EQ Mid Gain	-12-+12dB (variation block)	52-76		PSR-740 only	
13	EQ Mid Width	1.0-12.0 (variation block)	10-120		PSR-740 only	
14						
15						
16						

2WAY ROTARY SPEAKER (variation block)

No.	Parameter	Display	Value	See Table	Comment	Control
1	Rotor Speed	0.0Hz-39.7Hz	0-127	table#1		●
2	Drive Low	0-127	0-127			
3	Drive High	0-127	0-127			
4	Low/High	L63>H - L=H - L<H63	1-127			
5						
6	EQ Low Frequency	32Hz-2.0kHz	4-40	table#3		
7	EQ Low Gain	-12-+12dB	52-76			
8	EQ High Frequency	500Hz-16.0kHz	28-58	table#3		
9	EQ High Gain	-12-+12dB	52-76			
10						
11	Crossover Frequency	100Hz-10.0kHz	14-54	table#3		
12	Mic L-R Angle	0deg-180deg(resolution=3deg.)	0-60			
13						
14						
15						
16						

TREMOLO (variation, insertion block)

No.	Parameter	Display	Value	See Table	Comment	Control
1	LFO Frequency	0.00Hz-39.7Hz	0-127	table#1		●
2	AM Depth	0-127	0-127			
3	PM Depth	0-127	0-127			
4						
5						
6	EQ Low Frequency	32Hz-2.0kHz	4-40	table#3	PSR-740	
		50Hz-2.0kHz	8-40	table#3	PSR-640	
7	EQ Low Gain	-12-+12dB	52-76			
8	EQ High Frequency	500Hz-16.0kHz	28-58	table#3		
9	EQ High Gain	-12-+12dB	52-76			
10						
11	EQ Mid Frequency	100Hz-10.0kHz (variation block)	14-54	table#3	PSR-740 only	
12	EQ Mid Gain	-12-+12dB (variation block)	52-76		PSR-740 only	
13	EQ Mid Width	1.0-12.0 (variation block)	10-120		PSR-740 only	
14	LFO Phase Difference	-180-+180deg(resolution=3deg.)	4-124			
15	Input Mode	mono/stereo	0-1			
16						

AUTO PAN (variation, insertion block)

No.	Parameter	Display	Value	See Table	Comment	Control
1	LFO Frequency	0.00Hz-39.7Hz	0-127	table#1		●
2	L/R Depth	0-127	0-127			
3	F/R Depth	0-127	0-127			
4	PAN Direction	L<->R,L->R,L<-R,Lturn,Rturn,L/R		0-5		
5						
6	EQ Low Frequency	32Hz-2.0kHz	4-40	table#3	PSR-740	
		50Hz-2.0kHz	8-40	table#3	PSR-640	
7	EQ Low Gain	-12-+12dB	52-76			
8	EQ High Frequency	500Hz-16.0kHz	28-58	table#3		
9	EQ High Gain	-12-+12dB	52-76			
10						
11	EQ Mid Frequency	100Hz-10.0kHz (variation block)	14-54	table#3	PSR-740 only	
12	EQ Mid Gain	-12-+12dB (variation block)	52-76		PSR-740 only	
13	EQ Mid Width	1.0-12.0 (variation block)	10-120		PSR-740 only	
14						
15						
16						

PHASER 1 (chorus, variation, insertion block)

No.	Parameter	Display	Value	See Table	Comment	Control
1	LFO Frequency	0.00Hz-39.7Hz	0-127	table#1		
2	LFO Depth	0-127	0-127			
3	Phase Shift Offset	0-127	0-127			
4	Feedback Level	-63-+63	1-127			
5						
6	EQ Low Frequency	32Hz-2.0kHz	4-40	table#3	PSR-740	
		50Hz-2.0kHz	8-40	table#3	PSR-640	
7	EQ Low Gain	-12-+12dB	52-76			
8	EQ High Frequency	500Hz-16.0kHz	28-58	table#3		
9	EQ High Gain	-12-+12dB	52-76			
10	Dry/Wet	D63>W - D=W - D<W63	1-127			●
11	Stage	4,5,6 (chorus, insertion block)	4-6			
		4-12 (variation block)	4-12		PSR-740	
		6-10 (variation block)	6-10		PSR-640	
12	Diffusion	mono/stereo	0-1			
13						
14						
15						
16						

PHASER 2 (variation block)

No.	Parameter	Display	Value	See Table	Comment	Control
1	LFO Frequency	0.00Hz-39.7Hz	0-127	table#1		
2	LFO Depth	0-127	0-127			
3	Phase Shift Offset	0-127	0-127			
4	Feedback Level	-63-+63	1-127			
5						
6	EQ Low Frequency	32Hz-2.0kHz	4-40	table#3	PSR-740	
		50Hz-2.0kHz	8-40	table#3	PSR-640	
7	EQ Low Gain	-12-+12dB	52-76			
8	EQ High Frequency	500Hz-16.0kHz	28-58	table#3		
9	EQ High Gain	-12-+12dB	52-76			
10	Dry/Wet	D63>W - D=W - D<W63	1-127			●
11	Stage	3,4,5,6	3-6		PSR-740	
12		3,4,5	3-5		PSR-640	
13	LFO Phase Difference	-180deg-+180deg (resolution=3deg.)	4-124			
14						
15						
16						

DISTORTION, OVERDRIVE (variation, insertion block)

No.	Parameter	Display	Value	See Table	Comment	Control
1	Drive	0-127	0-127			●
2	EQ Low Frequency	32Hz-2.0kHz	4-40	table#3	PSR-740	
		50Hz-2.0kHz	8-40	table#3	PSR-640	
3	EQ Low Gain	-12-+12dB	52-76			
4	LPF Cutoff	1.0k-Thru	34-60	table#3		
5	Output Level	0-127	0-127			
6						
7	EQ Mid Frequency	100Hz-10.0kHz	14-54	table#3	PSR-740	
		500Hz-10.0kHz	28-54	table#3	PSR-640	
8	EQ Mid Gain	-12-+12dB	52-76			
9	EQ Mid Width	1.0-12.0	10-120			
10	Dry/Wet	D63>W - D=W - D<W63	1-127			
11	Edge(Clip Curve)	0-127	0-127	mild-sharp		
12						
13						
14						
15						
16						

COMP+DIST (variation block)

No.	Parameter	Display	Value	See Table	Comment	Control
1	Drive	0-127	0-127			●
2	EQ Low Frequency	32Hz-2.0kHz	4-40	table#3		
3	EQ Low Gain	-12-+12dB	52-76			
4	LPF Cutoff	1.0k-Thru	34-60	table#3		
5	Output Level	0-127	0-127			
6						
7	EQ Mid Frequency	100Hz-10.0kHz	14-54	table#3		
8	EQ Mid Gain	-12-+12dB	52-76			
9	EQ Mid Width	1.0-12.0	10-120			
10	Dry/Wet	D63>W - D=W - D<W63	1-127			
11	Edge(Clip Curve)	0-127	0-127	mild-sharp		
12	Attack	1ms-40ms	0-19	table#8		
13	Release	10ms-680ms	0-15	table#9		
14	Threshold	-48dB—6dB	79-121			
15	Ratio	1.0-20.0	0-7	table#10		
16						

AMP SIMULATOR (variation, insertion block)

No.	Parameter	Display	Value	See Table	Comment	Control
1	Drive	0-127	0-127			●
2	AMP Type	Off,Stack,Combo,Tube	0-3			
3	LPF Cutoff	1.0k-Thru	34-60	table#3		
4	Output Level	0-127	0-127			
5						
6						
7						
8						
9						
10	Dry/Wet	D63>W - D=W - D<W63	1-127			
11	Edge(Clip Curve)	0-127	0-127	mild-sharp		
12						
13						
14						
15						
16						

3BAND EQ(MONO) (variation, insertion block)

No.	Parameter	Display	Value	See Table	Comment	Control
1	EQ Low Gain	-12-+12dB	52-76			
2	EQ Mid Frequency	100Hz-10.0kHz	14-54	table#3	PSR-740	
		500Hz-10.0kHz	28-54	table#3	PSR-640	
3	EQ Mid Gain	-12-+12dB	52-76			
4	EQ Mid Width	1.0-12.0	10-120			
5	EQ High Gain	-12-+12dB	52-76			
6	EQ Low Frequency	50Hz-2.0kHz	8-40	table#3		
7	EQ High Frequency	500Hz-16.0kHz	28-58	table#3		
8						
9						
10						
11						
12						
13						
14						
15	Input Mode	mono/stereo	0-1			
16						

2BAND EQ(STEREO) (variation, insertion block)

No.	Parameter	Display	Value	See Table	Comment	Control
1	EQ Low Frequency	32Hz-2.0kHz	4-40	table#3	PSR-740	
		50Hz-2.0kHz	8-40	table#3	PSR-640	
2	EQ Low Gain	-12-+12dB	52-76			
3	EQ High Frequency	500Hz-16.0kHz	28-58	table#3		
4	EQ High Gain	-12-+12dB	52-76			
5						
6						
7						
8						
9						
10						
11						
12						
13						
14						
15						
16						

AUTO WAH (variation, insertion block)

No.	Parameter	Display	Value	See Table	Comment	Control
1	LFO Frequency	0.00Hz-39.7Hz	0-127	table#1		
2	LFO Depth	0-127	0-127			
3	Cutoff Frequency Offset	0-127	0-127			●
4	Resonance	1.0-12.0	10-120			
5						
6	EQ Low Frequency	32Hz-2.0kHz	4-40	table#3	PSR-740	
		50Hz-2.0kHz	8-40	table#3	PSR-640	
7	EQ Low Gain	-12-+12dB	52-76			
8	EQ High Frequency	500Hz-16.0kHz	28-58	table#3		
9	EQ High Gain	-12-+12dB	52-76			
10	Dry/Wet	D63>W - D=W - D<W63	1-127			
11	Drive	0-127(variation block)	0-127			
12						
13						
14						
15						
16						

AUTO WAH+DIST, AUTO WHA+ODRV (variation block)

No.	Parameter	Display	Value	See Table	Comment	Control
1	LFO Frequency	0.00Hz-39.7Hz	0-127	table#1		
2	LFO Depth	0-127	0-127			
3	Cutoff Frequency Offset	0-127	0-127			●
4	Resonance	1.0-12.0	10-120			
5						
6	EQ Low Frequency	32Hz-2.0kHz	4-40	table#3		
7	EQ Low Gain	-12-+12dB	52-76			
8	EQ High Frequency	500Hz-16.0kHz	28-58	table#3		
9	EQ High Gain	-12-+12dB	52-76			
10	Dry/Wet	D63>W - D=W - D<W63	1-127			
11	Drive	0-127	0-127			
12	EQ Low Gain(distortion)	-12-+12dB	52-76			
13	EQ Mid Gain(distortion)	-12-+12dB	52-76			
14	LPF Cutoff	1.0kHz-thru	34-60	table#3		
15	Output Level	0-127	0-127			
16						

TOUCH WAH 1 (variation, insertion block), TOUCH WAH+DIST (variation block)

No.	Parameter	Display	Value	See Table	Comment	Control
1	Sensitive	0-127	0-127			
2	Cutoff Frequency Offset	0-127	0-127			●
3	Resonance	1.0-12.0	10-120			
4						
5						
6	EQ Low Frequency	32Hz-2.0kHz	4-40	table#3		
7	EQ Low Gain	-12-+12dB	52-76			
8	EQ High Frequency	500Hz-16.0kHz	28-58	table#3		
9	EQ High Gain	-12-+12dB	52-76			
10	Dry/Wet	D63>W - D=W - D<W63	1-127			
11	Drive	0-127(variation block)	0-127			
12						
13						
14						
15						
16						

TOUCH WAH 2 (variation, insertion block), TOUCH WAH+ODRV (variation block)

No.	Parameter	Display	Value	See Table	Comment	Control
1	Sensitive	0-127	0-127			
2	Cutoff Frequency Offset	0-127	0-127			●
3	Resonance	1.0-12.0	10-120			
4						
5						
6	EQ Low Frequency	32Hz-2.0kHz	4-40	table#3		
7	EQ Low Gain	-12-+12dB	52-76			
8	EQ High Frequency	500Hz-16.0kHz	28-58	table#3		
9	EQ High Gain	-12-+12dB	52-76			
10	Dry/Wet	D63>W - D=W - D<W63	1-127			
11	Drive	0-127(variation block)	0-127			
12	EQ Low Gain(distortion)	-12-+12dB(variation block)	52-76			
13	EQ Mid Gain(distortion)	-12-+12dB(variation block)	52-76			
14	LPF Cutoff	1.0kHz-thru(variation block)	34-60	table#3		
15	Output Level	0-127(variation block)	0-127			
16	Release	10-680ms	52-67			

PITCH CHANGE 1 (variation block)

No.	Parameter	Display	Value	See Table	Comment	Control
1	Pitch	-24-+24	40-88			
2	Initial Delay	0.1mS-400.0mS	0-127	table#7		
3	Fine 1	-50-+50	14-114			
4	Fine 2	-50-+50	14-114			
5	Feedback Level	-63-+63	1-127			
6						
7						
8						
9						
10	Dry/Wet	D63>W - D=W - D<W63	1-127			●
11	Pan 1	L63-R63	1-127			
12	Output Level 1	0-127	0-127			
13	Pan 2	L63-R63	1-127			
14	Output Level 2	0-127	0-127			
15						
16						

PITCH CHANGE 2 (variation block)

No.	Parameter	Display	Value	See Table	Comment	Control
1	Pitch	-24-+24	40-88			
2	Initial Delay	0.1mS-400.0mS	0-127	table#7		
3	Fine 1	-50-+50cent	14-114			
4	Fine 2	-50-+50cent	14-114			
5	Feedback Level	-63-+63	1-127			
6						
7						
8						
9						
10	Dry/Wet	D63>W - D=W - D<W63	1-127			●
11	Pan 1	L63-R63	1-127			
12	Output Level 1	0-127	0-127			
13	Pan 2	L63-R63	1-127			
14	Output Level 2	0-127	0-127			
15						
16						

COMPRESSOR (variation, insertion block)

No.	Parameter	Display	Value	See Table	Comment	Control
1	Attack	1-40ms	0-19	table#8		
2	Release	10-680ms	0-15	table#9		
3	Threshold	-48—6dB	79-121			
4	Ratio	1.0-20.0	0-7	table#10		
5	Output Level	0-127	0-127			
6						
7						
8						
9						
10						
11						
12						
13						
14						
15						
16						

NOISE GATE (variation, insertion block)

No.	Parameter	Display	Value	See Table	Comment	Control
1	Attack	1-40ms	0-19	table#8		
2	Release	10-680ms	0-15	table#9		
3	Threshold	-72—30dB	55-97			
4	Output Level	0-127	0-127			
5						
6						
7						
8						
9						
10						
11						
12						
13						
14						
15						
16						

VOICE CANCEL (variation block)

No.	Parameter	Display	Value	See Table	Comment	Control
1						
2						
3						
4						
5						
6						
7						
8						
9						
10						
11	Low Adjust	0-26	0-26			
12	High Adjust	0-26	0-26			
13						
14						
15						
16						

NO EFFECT (reverb, chorus, variation block), THRU (variation, insertion block)

No.	Parameter	Display	Value	See Table	Comment	Control
1						
2						
3						
4						
5						
6						
7						
8						
9						
10						
11						
12						
13						
14						
15						
16						

HARMONIC ENHANCER (variation block)

No.	Parameter	Display	Value	See Table	Comment	Control
1	HPF Cutoff	500Hz-16kHz	28-58	table#3		
2	Drive	0-127	0-127			
3	Mix Level	0-127	0-127			
4						
5						
6						
7						
8						
9						
10						
11						
12						
13						
14						
15						
16						

TALKING MODULATION (variation block)

No.	Parameter	Display	Value	See Table	Comment	Control
1	Vowel	a,i,u,e,o	0-4			
2	Move speed	1-62	1-62			
3	Drive	0-127	0-127			
4	Output Level	0-127	0-127			
5						
6						
7						
8						
9						
10						
11						
12						
13						
14						
15						
16						

LO-FI (variation block)

No.	Parameter	Display	Value	See Table	Comment	Control
1	Sampling Freq Control	a,i,u,e,o	0-4			
2	Word Length	1-62	1-62			
3	Output Gain	0-127	0-127			
4	LPF Cutoff	0-127	0-127			
5	Filter Type	Thru,PowerBass,Radio,Tel,Clean,Low	0-5			
6	LPF Resonance	1.0-12.0	10-120			
7	Bit Assign	0-6	0-6			
8	Emphasis	Off/On	0-1			
9						
10	Dry/Wet	D63>W - D=W - D<W63	1-127			●
11						
12						
13						
14						
15	Input Mode	mono/stereo				
16						

DIST+DELAT (variation block), OVERDRIVE+DELAT (variation block)

No.	Parameter	Display	Value	See Table	Comment	Control
1	Lch Delay Time	0.1-1486.0ms	1-14860			
2	Rch Delay Time	0.1-1486.0ms	1-14860			
3	Delay Feedback Time	0.1-1486.0ms	1-14860			
4	Delay Feedback Level	-63-+63	1-127			
5	Delay Mix	0-127	0-127			
6	Dist Drive	0-127	0-127			
7	Dist Output Level	0-127	0-127			
8	Dist EQ Low Gain	-12-+12dB	52-76			
9	Dist EQ Mid Gain	-12-+12dB	52-76			
10	Dry/Wet	D63>W - D=W - D<W63	1-127			●
11						
12						
13						
14						
15						
16						

COMP+DIST+DELAT (variation block), COMP+OVERDRIVE+DELAT (variation block)

No.	Parameter	Display	Value	See Table	Comment	Control
1	Delay Time	0.1-1486.0ms	1-14860			
2	Delay Feedback Level	-63-+63	1-127			
3	Delay Mix	0-127	0-127			
4	Dist Drive	0-127	0-127			
5	Dist Output Level	0-127	0-127			
6	Dist EQ Low Gain	-12-+12dB	52-76			
7	Dist EQ Mid Gain	-12-+12dB	52-76			
8						
9						
10	Dry/Wet	D63>W - D=W - D<W63	1-127			●
11	Comp. Attack	1ms-40ms	0-19	table#8		
12	Comp. Release	10ms-680ms	0-15	table#9		
13	Comp. Threshold	-48dB—6dB	79-121			
14	Comp. Ratio	1.0-20.0	0-7	table#10		
15						
16						

WAH+DIST+DELAT (variation block), WAH+OVERDRIVE+DELAT (variation block)

No.	Parameter	Display	Value	See Table	Comment	Control
1	Delay Time	0.1-1486.0ms	1-14860			
2	Delay Feedback Level	-63-+63	1-127			
3	Delay Mix	0-127	0-127			
4	Dist Drive	0-127	0-127			
5	Dist Output Level	0-127	0-127			
6	Dist EQ Low Gain	-12-+12dB	52-76			
7	Dist EQ Mid Gain	-12-+12dB	52-76			
8						
9						
10	Dry/Wet	D63>W - D=W - D<W63	1-127			●
11	Wah Sensitive	0-127	0-127			
12	Wah Cutoff Freq Offset	0-127	0-127			
13	Wah Resonance	1.0-12.0	10-120			
14	Wah Release	10-680ms	52-67			
15						
16						

* "Dry/Wet" is avilable when variation connection = Insertion.

< Table 1-13 > Effect Data Value Assign Table

Table#1
LFO Frequency

Data	Value	Data	Value	Data	Value	Data	Value
0	0.00	32	1.35	64	2.69	96	8.41
1	0.04	33	1.39	65	2.78	97	8.75
2	0.08	34	1.43	66	2.86	98	9.08
3	0.13	35	1.47	67	2.94	99	9.42
4	0.17	36	1.51	68	3.03	100	9.76
5	0.21	37	1.56	69	3.11	101	10.1
6	0.25	38	1.60	70	3.20	102	10.8
7	0.29	39	1.64	71	3.28	103	11.4
8	0.34	40	1.68	72	3.37	104	12.1
9	0.38	41	1.72	73	3.45	105	12.8
10	0.42	42	1.77	74	3.53	106	13.5
11	0.46	43	1.81	75	3.62	107	14.1
12	0.51	44	1.85	76	3.70	108	14.8
13	0.55	45	1.89	77	3.87	109	15.5
14	0.59	46	1.94	78	4.04	110	16.2
15	0.63	47	1.98	79	4.21	111	16.8
16	0.67	48	2.02	80	4.37	112	17.5
17	0.72	49	2.06	81	4.54	113	18.2
18	0.76	50	2.10	82	4.71	114	19.5
19	0.80	51	2.15	83	4.88	115	20.9
20	0.84	52	2.19	84	5.05	116	22.2
21	0.88	53	2.23	85	5.22	117	23.6
22	0.93	54	2.27	86	5.38	118	24.9
23	0.97	55	2.31	87	5.55	119	26.2
24	1.01	56	2.36	88	5.72	120	27.6
25	1.05	57	2.40	89	6.06	121	28.9
26	1.09	58	2.44	90	6.39	122	30.3
27	1.14	59	2.48	91	6.73	123	31.6
28	1.18	60	2.52	92	7.07	124	33.0
29	1.22	61	2.57	93	7.40	125	34.3
30	1.26	62	2.61	94	7.74	126	37.0
31	1.30	63	2.65	95	8.08	127	39.7

Table#2
Modulation Delay Offset

Data	Value	Data	Value	Data	Value	Data	Value
0	0.0	32	3.2	64	6.4	96	9.6
1	0.1	33	3.3	65	6.5	97	9.7
2	0.2	34	3.4	66	6.6	98	9.8
3	0.3	35	3.5	67	6.7	99	9.9
4	0.4	36	3.6	68	6.8	100	10.0
5	0.5	37	3.7	69	6.9	101	11.1
6	0.6	38	3.8	70	7.0	102	12.2
7	0.7	39	3.9	71	7.1	103	13.3
8	0.8	40	4.0	72	7.2	104	14.4
9	0.9	41	4.1	73	7.3	105	15.5
10	1.0	42	4.2	74	7.4	106	17.1
11	1.1	43	4.3	75	7.5	107	18.6
12	1.2	44	4.4	76	7.6	108	20.2
13	1.3	45	4.5	77	7.7	109	21.8
14	1.4	46	4.6	78	7.8	110	23.3
15	1.5	47	4.7	79	7.9	111	24.9
16	1.6	48	4.8	80	8.0	112	26.5
17	1.7	49	4.9	81	8.1	113	28.0
18	1.8	50	5.0	82	8.2	114	29.6
19	1.9	51	5.1	83	8.3	115	31.2
20	2.0	52	5.2	84	8.4	116	32.8
21	2.1	53	5.3	85	8.5	117	34.3
22	2.2	54	5.4	86	8.6	118	35.9
23	2.3	55	5.5	87	8.7	119	37.5
24	2.4	56	5.6	88	8.8	120	39.0
25	2.5	57	5.7	89	8.9	121	40.6
26	2.6	58	5.8	90	9.0	122	42.2
27	2.7	59	5.9	91	9.1	123	43.7
28	2.8	60	6.0	92	9.2	124	45.3
29	2.9	61	6.1	93	9.3	125	46.9
30	3.0	62	6.2	94	9.4	126	48.4
31	3.1	63	6.3	95	9.5	127	50.0

Table#3
EQ Frequency

Data	Value	Data	Value
0	THRU(0)	32	800
1	22	33	900
2	25	34	1.0k
3	28	35	1.1k
4	32	36	1.2k
5	36	37	1.4k
6	40	38	1.6k
7	45	39	1.8k
8	50	40	2.0k
9	56	41	2.2k
10	63	42	2.5k
11	70	43	2.8k
12	80	44	3.2k
13	90	45	3.6k
14	100	46	4.0k
15	110	47	4.5k
16	125	48	5.0k
17	140	49	5.6k
18	160	50	6.3k
19	180	51	7.0k
20	200	52	8.0k
21	225	53	9.0k
22	250	54	10.0k
23	280	55	11.0k
24	315	56	12.0k
25	355	57	14.0k
26	400	58	16.0k
27	450	59	18.0k
28	500	60	THRU(20.0k)
29	560		
30	630		
31	700		

Table#4
Reverb time

Data	Value	Data	Value	Data	Value
0	0.3	32	3.5	64	17.0
1	0.4	33	3.6	65	18.0
2	0.5	34	3.7	66	19.0
3	0.6	35	3.8	67	20.0
4	0.7	36	3.9	68	25.0
5	0.8	37	4.0	69	30.0
6	0.9	38	4.1		
7	1.0	39	4.2		
8	1.1	40	4.3		
9	1.2	41	4.4		
10	1.3	42	4.5		
11	1.4	43	4.6		
12	1.5	44	4.7		
13	1.6	45	4.8		
14	1.7	46	4.9		
15	1.8	47	5.0		
16	1.9	48	5.5		
17	2.0	49	6.0		
18	2.1	50	6.5		
19	2.2	51	7.0		
20	2.3	52	7.5		
21	2.4	53	8.0		
22	2.5	54	8.5		
23	2.6	55	9.0		
24	2.7	56	9.5		
25	2.8	57	10.0		
26	2.9	58	11.0		
27	3.0	59	12.0		
28	3.1	60	13.0		
29	3.2	61	14.0		
30	3.3	62	15.0		
31	3.4	63	16.0		

Table#5
Delay Time(200.0ms)

Data	Value	Data	Value	Data	Value	Data	Value
0	0.1	32	50.5	64	100.8	96	151.2
1	1.7	33	52.0	65	102.4	97	152.8
2	3.2	34	53.6	66	104.0	98	154.4
3	4.8	35	55.2	67	105.6	99	155.9
4	6.4	36	56.8	68	107.1	100	157.5
5	8.0	37	58.3	69	108.7	101	159.1
6	9.5	38	59.9	70	110.3	102	160.6
7	11.1	39	61.5	71	111.9	103	162.2
8	12.7	40	63.1	72	113.4	104	163.8
9	14.3	41	64.6	73	115.0	105	165.4
10	15.8	42	66.2	74	116.6	106	166.9
11	17.4	43	67.8	75	118.2	107	168.5
12	19.0	44	69.4	76	119.7	108	170.1
13	20.6	45	70.9	77	121.3	109	171.7
14	22.1	46	72.5	78	122.9	110	173.2
15	23.7	47	74.1	79	124.4	111	174.8
16	25.3	48	75.7	80	126.0	112	176.4
17	26.9	49	77.2	81	127.6	113	178.0
18	28.4	50	78.8	82	129.2	114	179.5
19	30.0	51	80.4	83	130.7	115	181.1
20	31.6	52	81.9	84	132.3	116	182.7
21	33.2	53	83.5	85	133.9	117	184.3
22	34.7	54	85.1	86	135.5	118	185.8
23	36.3	55	86.7	87	137.0	119	187.4
24	37.9	56	88.2	88	138.6	120	189.0
25	39.5	57	89.8	89	140.2	121	190.6
26	41.0	58	91.4	90	141.8	122	192.1
27	42.6	59	93.0	91	143.3	123	193.7
28	44.2	60	94.5	92	144.9	124	195.3
29	45.7	61	96.1	93	146.5	125	196.9
30	47.3	62	97.7	94	148.1	126	198.4
31	48.9	63	99.3	95	149.6	127	200.0

Table#6
Room Size

Data	Value	Data	Value	Data	Value	Data	Value
0	0.1	32	5.1	64	10.1	96	15.1
1	0.3	33	5.3	65	10.3	97	15.3
2	0.4	34	5.4	66	10.4	98	15.5
3	0.6	35	5.6	67	10.6	99	15.6
4	0.7	36	5.7	68	10.8	100	15.8
5	0.9	37	5.9	69	10.9	101	15.9
6	1.0	38	6.1	70	11.1	102	16.1
7	1.2	39	6.2	71	11.2	103	16.2
8	1.4	40	6.4	72	11.4	104	16.4
9	1.5	41	6.5	73	11.5	105	16.6
10	1.7	42	6.7	74	11.7	106	16.7
11	1.8	43	6.8	75	11.9	107	16.9
12	2.0	44	7.0	76	12.0	108	17.0
13	2.1	45	7.2	77	12.2	109	17.2
14	2.3	46	7.3	78	12.3	110	17.3
15	2.5	47	7.5	79	12.5	111	17.5
16	2.6	48	7.6	80	12.6	112	17.6
17	2.8	49	7.8	81	12.8	113	17.8
18	2.9	50	7.9	82	12.9	114	18.0
19	3.1	51	8.1	83	13.1	115	18.1
20	3.2	52	8.2	84	13.3	116	18.3
21	3.4	53	8.4	85	13.4	117	18.4
22	3.5	54	8.6	86	13.6	118	18.6
23	3.7	55	8.7	87	13.7	119	18.7
24	3.9	56	8.9	88	13.9	120	18.9
25	4.0	57	9.0	89	14.0	121	19.1
26	4.2	58	9.2	90	14.2	122	19.2
27	4.3	59	9.3	91	14.4	123	19.4
28	4.5	60	9.5	92	14.5	124	19.5
29	4.6	61	9.7	93	14.7	125	19.7
30	4.8	62	9.8	94	14.8	126	19.8
31	5.0	63	10.0	95	15.0	127	20.0

Table#7
Delay Time(400.0ms)

Data	Value	Data	Value	Data	Value	Data	Value
0	0.1	32	100.9	64	201.6	96	302.4
1	3.2	33	104.0	65	204.8	97	305.5
2	6.4	34	107.2	66	207.9	98	308.7
3	9.5	35	110.3	67	211.1	99	311.8
4	12.7	36	113.5	68	214.2	100	315.0
5	15.8	37	116.6	69	217.4	101	318.1
6	19.0	38	119.8	70	220.5	102	321.3
7	22.1	39	122.9	71	223.7	103	324.4
8	25.3	40	126.1	72	226.8	104	327.6
9	28.4	41	129.2	73	230.0	105	330.7
10	31.6	42	132.4	74	233.1	106	333.9
11	34.7	43	135.5	75	236.3	107	337.0
12	37.9	44	138.6	76	239.4	108	340.2
13	41.0	45	141.8	77	242.6	109	343.3
14	44.2	46	144.9	78	245.7	110	346.5
15	47.3	47	148.1	79	248.9	111	349.6
16	50.5	48	151.2	80	252.0	112	352.8
17	53.6	49	154.4	81	255.2	113	355.9
18	56.8	50	157.5	82	258.3	114	359.1
19	59.9	51	160.7	83	261.5	115	362.2
20	63.1	52	163.8	84	264.6	116	365.4
21	66.2	53	167.0	85	267.7	117	368.5
22	69.4	54	170.1	86	270.9	118	371.7
23	72.5	55	173.3	87	274.0	119	374.8
24	75.7	56	176.4	88	277.2	120	378.0
25	78.8	57	179.6	89	280.3	121	381.1
26	82.0	58	182.7	90	283.5	122	384.3
27	85.1	59	185.9	91	286.6	123	387.4
28	88.3	60	189.0	92	289.8	124	390.6
29	91.4	61	192.2	93	292.9	125	393.7
30	94.6	62	195.3	94	296.1	126	396.9
31	97.7	63	198.5	95	299.2	127	400.0

Table#8
Compressor Attack Time

Data	Value
0	1
1	2
2	3
3	4
4	5
5	6
6	7
7	8
8	9
9	10
10	12
11	14
12	16
13	18
14	20
15	23
16	26
17	30
18	35
19	40

Table#9
Compressor Release Time

Data	Value
0	10
1	15
2	25
3	35
4	45
5	55
6	65
7	75
8	85
9	100
10	115
11	140
12	170
13	230
14	340
15	680

Table#10
Compressor Ratio

Data	Value
0	1.0
1	1.5
2	2.0
3	3.0
4	5.0
5	7.0
6	10.0
7	20.0

Table#11
Reverb Width;Depth;Height

Data	Value	Data	Value	Data	Value	Data	Value
0	0.5	32	8.8	64	17.6	96	27.5
1	0.8	33	9.1	65	17.9	97	27.8
2	1.0	34	9.4	66	18.2	98	28.1
3	1.3	35	9.6	67	18.5	99	28.5
4	1.5	36	9.9	68	18.8	100	28.8
5	1.8	37	10.2	69	19.1	101	29.2
6	2.0	38	10.4	70	19.4	102	29.5
7	2.3	39	10.7	71	19.7	103	29.9
8	2.6	40	11.0	72	20.0	104	30.2
9	2.8	41	11.2	73	20.2		
10	3.1	42	11.5	74	20.5		
11	3.3	43	11.8	75	20.8		
12	3.6	44	12.1	76	21.1		
13	3.9	45	12.3	77	21.4		
14	4.1	46	12.6	78	21.7		
15	4.4	47	12.9	79	22.0		
16	4.6	48	13.1	80	22.4		
17	4.9	49	13.4	81	22.7		
18	5.2	50	13.7	82	23.0		
19	5.4	51	14.0	83	23.3		
20	5.7	52	14.2	84	23.6		
21	5.9	53	14.5	85	23.9		
22	6.2	54	14.8	86	24.2		
23	6.5	55	15.1	87	24.5		
24	6.7	56	15.4	88	24.9		
25	7.0	57	15.6	89	25.2		
26	7.2	58	15.9	90	25.5		
27	7.5	59	16.2	91	25.8		
28	7.8	60	16.5	92	26.1		
29	8.0	61	16.8	93	26.5		
30	8.3	62	17.1	94	26.8		
31	8.6	63	17.3	95	27.1		

PSR-740 MIDI IMPLEMENTATION CHART

[Portable Keyboard]
Model : PSR-740

MIDI Implementation Chart

Date :3-MAR-1999
Version : 1.0

Function...		Transmitted		Recognized		Remarks
Basic	Default	1 - 16	*1	1 - 16	*2	
Channel	Changed	1 - 16	*1	1 - 16	*2	
	Default	3		3		
Mode	Messages	x		x		
	Altered	**********		x		
Note		0 - 127		0 - 127		
Number	:True voice	**********		0 - 127		
Velocity	Note ON	o 9nH,v=1-127		o 9nH,v=1-127		
	Note OFF	x 9nH,v=0		x		
After	Key's	x		x		
Touch	Ch's	x		o		
Pitch Bend		o		o		
	0,32	o		o		Bank Select
	1,7,10,11	o		o		
	5	x		o		Portamento Time
	6,38	o		o		Data Entry
Control	64,66-67	o		o		
	65	x		o		Portamento
Change	71-72,74	o		o		Sound Controller
	73	x		o		Sound Controller
	84	x		o		Portament Cntrl
	91,93-94	o		o		Effect SendLevel
	96-97	x		o		Data Inc,Dec
	98-99	o		o		NRPN LSB,MSB
	100-101	o		o		RPN LSB,MSB
Prog		o 0 - 127		o 0 - 127		
Change	:True #	**********				
System Exclusive		o		o		
	: Song Pos.	x		x		
Common	: Song Sel.	x		x		
	: Tune	x		x		
System	: Clock	o		o		
Real Time	: Commands	o		o		
	: All Sound Off	x		o		
Aux	: Reset All Cntrls	x		o		
	: Local ON/OFF	x		x		
Mes-	: All Notes OFF	x		o(123-127)		
sages	: Active Sense	o		o		
	: Reset	x		x		

Mode 1 : OMNI ON , POLY Mode 2 : OMNI ON ,MONO
Mode 3 : OMNI OFF, POLY Mode 4 : OMNI OFF,MONO"

o : Yes
x : No

PSR-640 MIDI IMPLEMENTATION CHART

[Portable Keyboard]
Model : PSR-640

MIDI Implementation Chart

Date :3-MAR-1999
Version : 1.0

Function...		Transmitted		Recognized		Remarks
Basic	Default	1 - 16	*1	1 - 16	*2	
Channel	Changed	1 - 16	*1	1 - 16	*2	
	Default	3		3		
Mode	Messages	x		x		
	Altered	**********		x		
Note		0 - 127		0 - 127		
Number	:True voice	**********		0 - 127		
Velocity	Note ON	o 9nH,v=1-127		o 9nH,v=1-127		
	Note OFF	x 9nH,v=0		x		
After	Key's	x		x		
Touch	Ch's	x		o		
Pitch Bend		o		o		
	0,32	o		o		Bank Select
	1,5	x		o		
	7,10,11	o		o		
	6,38	o		o		Data Entry
Control	64,66-67	o		o		
	65	x		o		Portamento
Change	72	o		o		Sound Controller
	71,73-74	x		o		Sound Controller
	84	x		o		Portament Cntrl
	91,93-94	o		o		Effect SendLevel
	96-97	x		o		Data Inc,Dec
	98-99	x		o		NRPN LSB,MSB
	100-101	o		o		RPN LSB,MSB
Prog Change	:True #	o 0 - 127 **********		o 0 - 127		
System Exclusive		o		o		
	: Song Pos.	x		x		
Common	: Song Sel.	x		x		
	: Tune	x		x		
System	: Clock	o		o		
Real Time	: Commands	o		o		
	: All Sound Off	x		o		
Aux	: Reset All Cntrls	x		o		
	: Local ON/OFF	x		x		
Mes-	: All Notes OFF	x		o(123-127)		
sages	: Active Sense	o		o		
	: Reset	x		x		

Mode 1 : OMNI ON , POLY Mode 2 : OMNI ON ,MONO o : Yes
Mode 3 : OMNI OFF, POLY Mode 4 : OMNI OFF,MONO x : No

PORTATONE
PSR-740/PSR-640

PARTS LIST

CONTENTS

Notes : DESTINATION ABBREVIATIONS

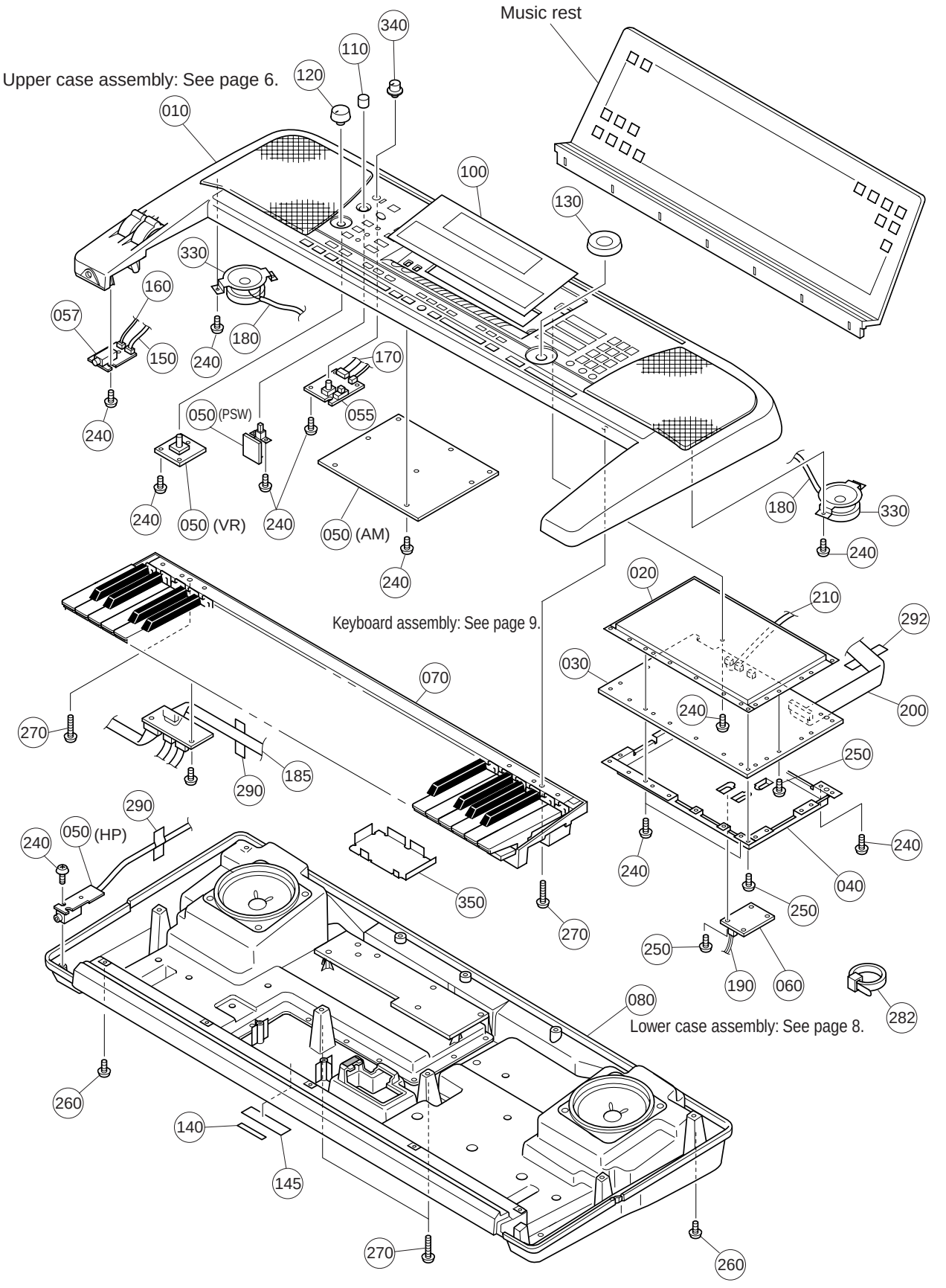
A : Australian model	M : South African model
B : British model	O : Chinese model
C : Canadian model	Q : South-east Asia model
D : German model	T : Taiwan model
E : European model	U : U.S.A. model
F : French model	V : General export model (110V)
H : North European model	W: General export model (220)
I : Indonesian model	N,X : General export model
J : Japanese model	Y : Export model

WARNING

Components having special characteristics are marked ⚠ and must be replaced with parts having specification equal to those originally installed.

- The numbers “QTY” show quantities for each unit.
- The parts with “--” in “PART NO.” are not available as spare parts.
- This mark “ } ” in the REMARKS column means these parts are interchangeable.
- The second letter of the shaded ( ) part number is O, not zero.
- The second letter of the shaded ( ) part number is I, not one.

PSR-740 OVERALL ASSEMBLY

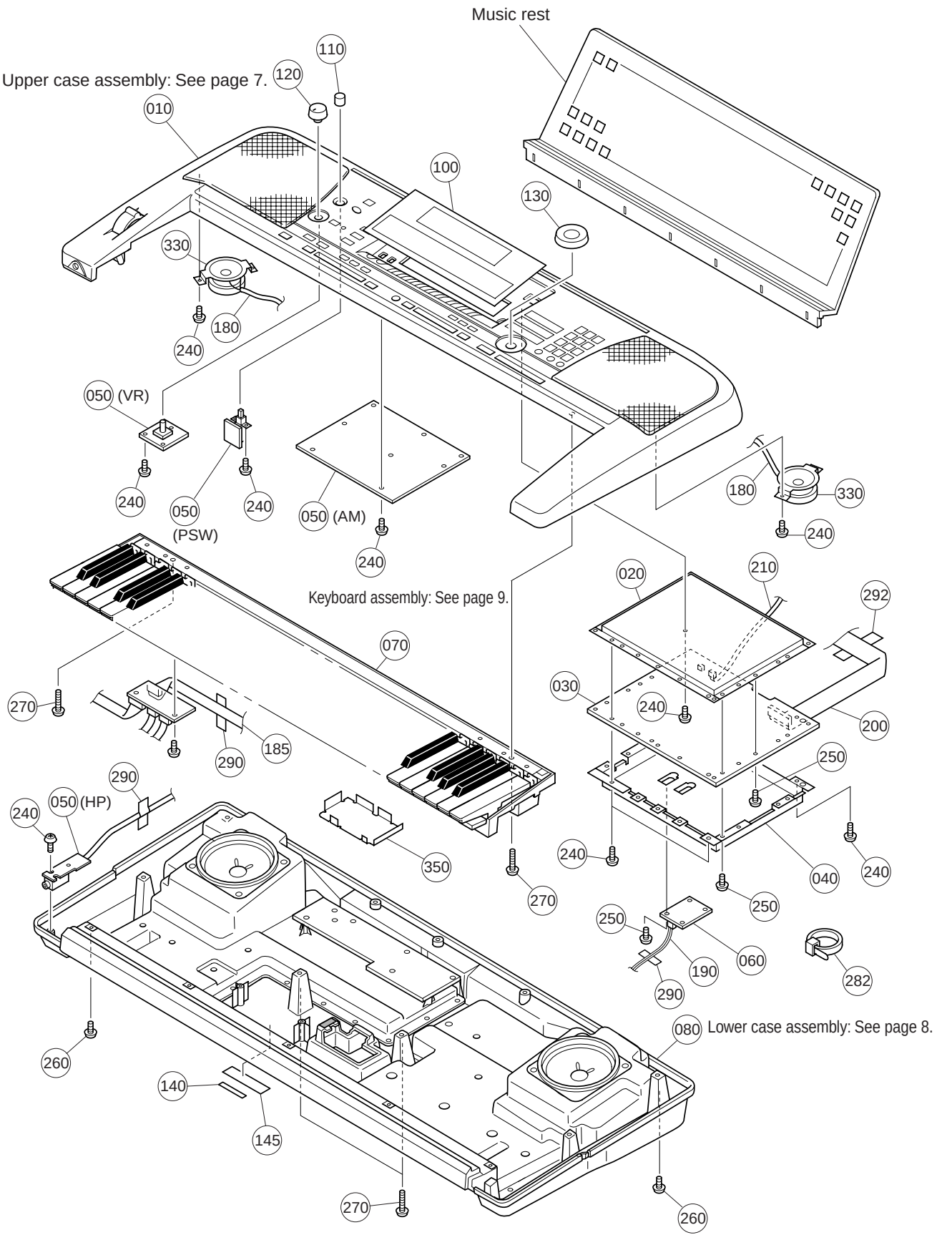


	REF NO.	PART NO.	DESCRIPTION			REMARKS	QTY	RANK
		--	OVERALL ASSEMBLY			PSR-740		
	010	--	Upper Case Assembly					
*	020	V3867000	Shield Cover U					
*	030	V3200400	Circuit Board	DM				
*	040	V3867700	Shield Cover L					
*	050	V3866000	Circuit Board	AM				
*	055	V4201700	Circuit Board	MIC				
*	057	V4201800	Circuit Board	MIC-JACK				
*	060	V4200400	Circuit Board	INV				
	070	V2694600	Keyboard Assembly	16M C61 MK33				23
	080	--	Lower Case Assembly					
*	100	V3867200	LCD Seal					
	110	VQ218800	Push Knob			STANDBY/ON		03
	120	VU432400	Knob			MASTER VOLUME		01
	130	V4561900	Knob			Data Dial		
	140	--	Label					
	145	--	Label					
	150	--	Connector Assembly	MICJ-DM				
	160	--	Connector Assembly	MICJ-SH				
	170	--	Connector Assembly	MICSH-DM				
	180	--	Connector Assembly	TWEETER				
	185	--	Connector Assembly	DM-MKS				
	190	--	Connector Assembly	INV				
*	200	V3866300	Connector Assembly	FDD				
*	210	V3866400	Connector Assembly	FDD				
	240	EP600280	Bind Head Tapping Screw-P	3.0X8 MFZN2Y			32	01
	250	EP600130	Bind Head Tapping Screw-B	3.0X6 MFZN2Y			25	01
	260	EP600300	Bind Head Tapping Screw-P	3.0X12 MFZN2Y			16	01
	270	VK228100	Bind Head Tapping Screw-P	3.0X25 MFZN2Y			4	01
	282	CB069250	Cord Holder	BK-1				01
	290	VA126100	Adhesive Tape	12X50			12	03
	292	VF298800	Adhesive Tape	19X70		}	4	01
	292	VV269300	Adhesive Tape	12X120		}	2	
*	330	XV910A00	Speaker	5.0cm 4 ohm		TWEETER	2	
	340	V2300100	Knob			INPUT VOLUME		04
	350	--	Cover					
			ACCESSORIES					
*		V2589700	Music Rest	BL				
		VZ089200	AC Adapter	PA-6 BL		J		16
*		V3865300	Japanese Guide Sheet			J		
*		V3865400	Floppy Disk	3.5 inch				

✻: New Parts

RANK: Japan only

PSR-640 OVERALL ASSEMBLY



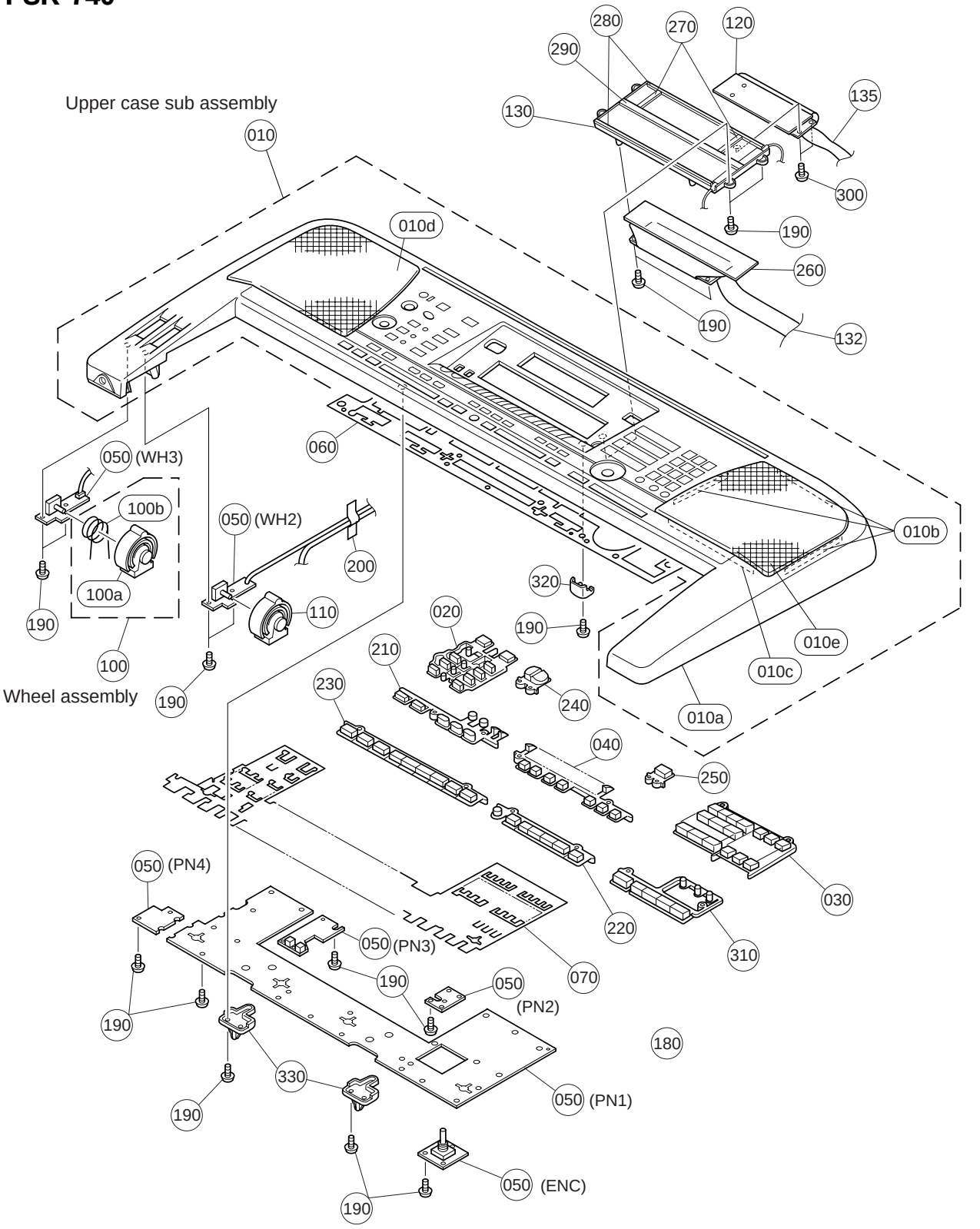
	REF NO.	PART NO.	DESCRIPTION			REMARKS	QTY	RANK
		--	OVERALL ASSEMBLY			PSR-640 (V387480)		
	010	--	Upper Case Assembly			(V387680)		
*	020	V3876900	Shield Cover U					
*	030	V3505100	Circuit Board	DM				
*	040	V3877000	Shield Cover L					
*	050	V3505000	Circuit Board	AM				
*	060	V4200400	Circuit Board	INV				
	070	V2694600	Keyboard Assembly	16M C61 MK33				23
	080	--	Lower Case Assembly			(V386710)		
*	100	V3877200	LCD Seal					
	110	VQ218800	Push Knob			STANDBY/ON		03
	120	VU432400	Knob			MASTER VOLUME		01
*	130	V4561900	Knob			Data Dial		
	140	--	Label			(VS42110)		
	145	--	Label			(V456970)		
	180	--	Connector Assembly	TWEETER		(V386350)		
	185	--	Connector Assembly	DM-MKS		(V379860)		
	190	--	Connector Assembly	INV		(V386760)		
*	200	V3866300	Connector Assembly	FDD				
*	210	V3866400	Connector Assembly	FDD				
	240	EP600280	Bind Head Tapping Screw-P	3.0X8 MFZN2Y			24	01
	250	EP600130	Bind Head Tapping Screw-B	3.0X6 MFZN2Y			16	01
	260	EP600300	Bind Head Tapping Screw-P	3.0X12 MFZN2Y			16	01
	270	VK228100	Bind Head Tapping Screw-P	3.0X25 MFZN2Y			4	01
	282	CB069250	Cord Holder	BK-1				01
	290	VA126100	Adhesive Tape	12X50			7	03
	292	VF298800	Adhesive Tape	19X70			4	01
	292	VV269300	Adhesive Tape	12X120			2	
*	330	XV910A00	Speaker	5.0cm 4 ohm		TWEETER	2	
	350	--	Cover			(V441530)		
			ACCESSORIES					
*		V2589700	Music Rest	BL				
		VZ089200	AC Adapter	PA-6 BL		J		16
*		V3875300	Japanese Guide Sheet			J		
*		V3875900	Floppy Disk	3.5 inch				

*: New Parts

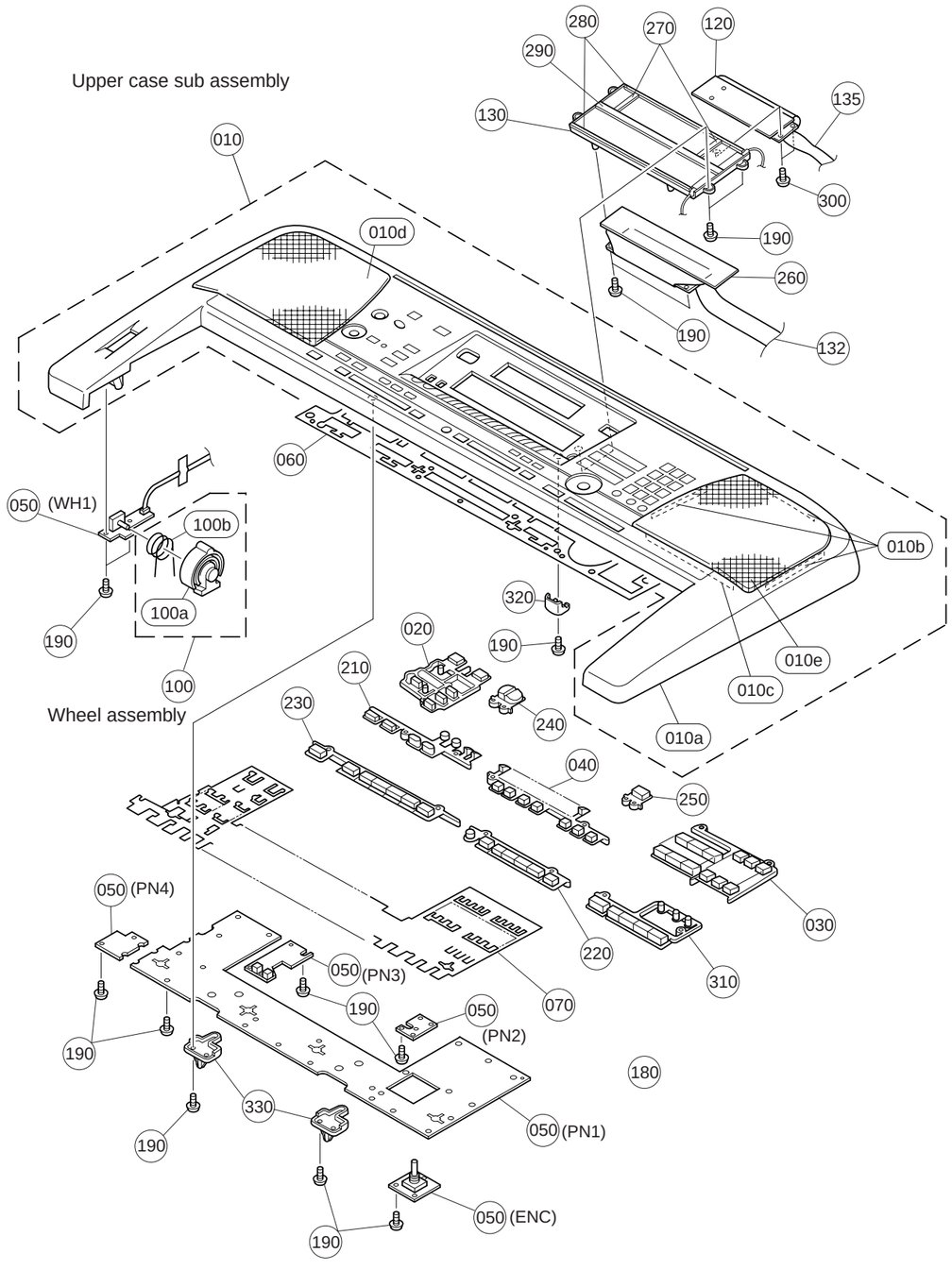
RANK: Japan only

UPPER CASE ASSEMBLY

• PSR-740



• PSR-640



	REF NO.	PART NO.	DESCRIPTION			REMARKS	QTY	RANK
			UPPER CASE ASSEMBLY			PSR-740/PSR-640		
		--	Upper Case Assembly			PSR-740 (V386690)		
		--	Upper Case Assembly			PSR-640 (V387680)		
*	010	V3867800	Upper Case Sub Assembly			PSR-740		
*	010	V3877800	Upper Case Sub Assembly			PSR-640		
	010a	--	Upper Case			PSR-740 (V386960)		
	010a	--	Upper Case			PSR-640 (V387790)		
	010b	--	Spacer	L100		(V384790)	6	
	010c	--	Spacer	L=145		(V387020)	2	
*	010d	V3869700	Speaker Grille	LEFT				
*	010e	V3869800	Speaker Grille	RIGHT				
*	020	V4046200	Panel Switch L			PSR-740 RECORD,..,SUSTAIN		
*	020	V4046300	Panel Switch L			PSR-640 RECPRD,..,SUSTAIN		
*	030	V4046400	Panel Switch R1			PSR-740 ORGAN FLUTES,..,+YES		
*	030	V4046600	Panel Switch R1			PSR-640 VOICE L,..,+YES		
*	040	V3824100	Panel Switch C1			PSR-740 LCD select 1-16, ON/OFF,..,VOICE R2		2
*	040	V3886200	Panel Switch C1			PSR-640 LCD select 1-16, VOICE L,..,VOICE R2		
*	050	V3866700	Circuit Board	PN		PSR-740		
*	050	V3866800	Circuit Board	PN		PSR-640		
	060	--	Vibration-proof Sheet U			(V388450)		
	070	--	Vibration-proof Sheet L			(V388460)		
	100	VY793100	Wheel Assembly			PSR-740 PICH BEND		04
	100	--	Wheel Assembly			PSR-640 PICH B. (VT48770)		
	100a	VY750800	Wheel			PSR-740		03
	100a	VT366400	Wheel			PSR-640		03
	100b	VT440100	Spring					03
	110	VY750800	Wheel			PSR-740 MODULATION		03
	120	VT282300	LCD	EDMMR03Y00		Upper		16
*	130	V3863700	Back-lit Assembly	PT				
	132	--	Connector Assembly	DM-LCD1		(V379910)		
	135	--	Connector Assembly	DM-LCD2		(V379920)		
	190	EP600280	Bind Head Tapping Screw-P	3.0X8 MFZN2Y		PSR-740	63	01
	190	EP600280	Bind Head Tapping Screw-P	3.0X8 MFZN2Y		PSR-640	61	01
	200	VA126100	Adhesive Tape	12X50			3	03
*	210	V3824200	Panel Switch C2			PSR-740 SYNC STOP,.., GROOVE ON/OFF		
*	210	V3886300	Panel Switch C2			PSR-640 SYNC STOP,.., FINGERING		
*	220	V4046800	Panel Switch C3			MEMORY,...,FREEZE		
*	230	V4047000	Panel Switch C4			PSR-740 INTRO,..,ENDING		
*	230	V4047300	Panel Switch C4			PSR-640 INTRO,..,ENDING		.
*	240	V4047400	Panel Switch UR			LCD (BACK,NEXT)		
*	250	V4047500	Panel Switch UL			LCD (EXIT)		
*	260	V3863900	LCD	C-51115N-T-		Lower		
	270	--	Vibration-proof Pad	PE O		(V386790)	2	
	280	--	Vibration-proof Pad	PE P		(V386800)	2	
	290	--	Vibration-proof Pad	PE Q		(V386810)		
	300	EP620100	Bind Head Tapping Screw-P	2.6X8 MFZN2Y			4	01
*	310	V4047700	Panel Switch R2			STOP,..,MULTI PAD		
*	320	V3750500	PCB Bracket					
*	330	V3750400	Angle Bracket				2	

*: New Parts

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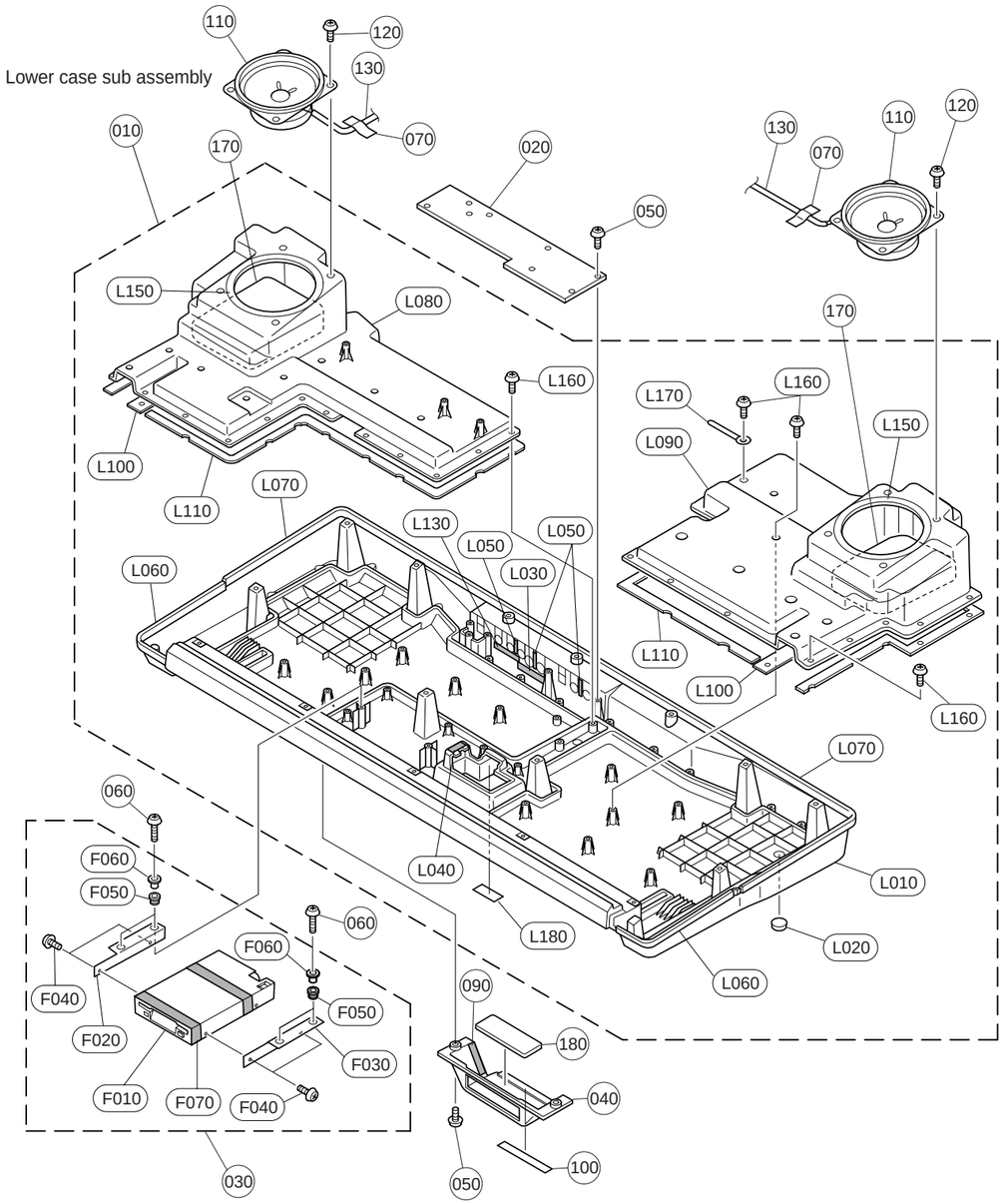
LOWER CASE ASSEMBLY



Floppy disk drive assembly

	REF NO.	PART NO.	DESCRIPTION			REMARKS	QTY	RANK
		--	LOWER CASE ASSEMBLY			PSR-740/PSR-640 (V386710)		
*	010	**V3869400**	Lower Case Sub Assembly					
	020	**V4639400**	Circuit Board	JACK				
	030	--	Floppy Disk Drive Assembly			(V388290)		
	040	**VT366600**	Cover, FDD					05
	050	**EP600280**	Bind Head Tapping Screw-P	3.0X8 MFZN2Y			10	01
	060	**VM839600**	Bind Head Tapping Screw-P	4.0X16 MFZN2Y			4	01
	070	**VA126100**	Adhesive Tape	12X50			5	03
	090	--	Vibration-proof Tape	10X40X0.5		(VT85830)	2	
	100	--	Vibration-proof Tape	7X100X0.5		(VT85820)		
	110	**XT523A00**	Speaker	12.0cm 4 ohm 10W		WOOFER	2	07
	120	**EP640500**	Bind Head Tapping Screw-P	4.0X10 MFZN2Y			8	01
	130	--	Connector Assembly	WOOFER		(V386340)		
	170	**V4399800**	Cushion				2	
	180	--	Cushion	30X110XT3.5		(VZ53050)		
*		**V3869400**	Lower Case Sub Assembly					
	L010	--	Lower Case			(VY79380)		
	L020	**CB043750**	Foot	BL T1.6			5	01
	L030	--	Vibration-proof Tape	10X60X0.5		(VT91560)		
	L040	--	Seal Tape E			(VU03320)		
	L050	--	Felt	20X5X2		(VU06090)	3	
	L060	--	Cushion	13X210 T2.0		(V462340)	2	
	L070	--	Vibration-proof Tape	13X700 T0.5		(VZ27440)	2	
	L080	--	Speaker Box L			(V374980)		
	L090	--	Speaker Box R			(V374990)		
	L100	--	Seal Tape 1	20X70 T1.0		(VZ08600)	2	
	L110	--	Seal Tape 2	8X1800 T1.0		(VZ08610)	2	
	L130	--	Vibration-proof Tape	8X60X0.5		(VZ49040)	2	
	L150	--	Seal Tape SP	PSR730		(VZ08650)	2	
	L160	**EP640500**	Bind Head Tapping Screw-P	4.0X10 MFZN2Y			53	01
	L170	**CB817510**	Cord Binder	S-14B				03
	L180	--	Vibration-proof Tape	6X25X0.3		(VJ56490)		
		--	Floppy Disk Drive Assembly			(V388290)		
	F010	**V3075300**	Floppy Disk Drive	MF355F-3252MG F				16
	F020	**VT431000**	Holder, FDD	LEFT				03
	F030	**VT431100**	Holder, FDD	RIGHT				03
	F040	**EG330360**	Bind Head Screw	3.0X6 MFZN2BL			4	01
	F050	**VA121600**	Bushing				4	01
	F060	**VK431100**	FDD Spacer				4	01
	F070	--	Adhesive Tape	ECT #590S W=15		(ZL35000)		

*: New Parts

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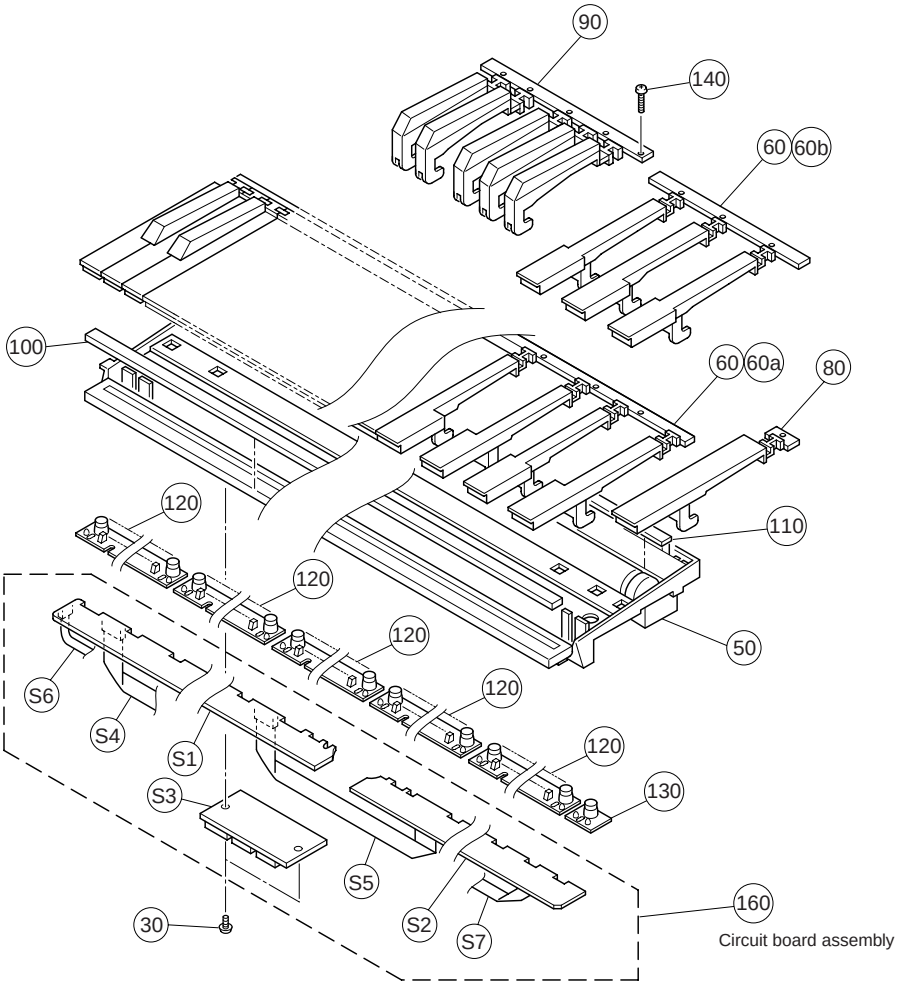
KEYBOARD ASSEMBLY



REF NO.	PART NO.	DESCRIPTION			REMARKS	QTY	RANK
	V2694600	KEYBOARD ASSEMBLY	16M C61 MKS3		PSR-740/PSR-640		23
30	**EP630220**	Bind Head Tapping Screw-P	3.0X8 MFZN2BL			2	01
50	**VU328600**	Frame	C61 16M			10	
60	**VH1809C0**	White Keys	16L CEGBDFA			5	05
60a	**--**	White Keys	16L CEGB		(VH18090)	5	
60b	**--**	White Keys	16L DFA		(VH18100)	5	
80	**VH181100**	White Key	16L C'				01
90	**VH181200**	Black Keys	16L #			5	03
100	**VH181300**	Felt					03
110	**VH181400**	Rubber Sheet					01
120	**VU328400**	Rubber Contact	16M OCT 2M 12KEYS			5	06
130	**VU328500**	Rubber Contact	16M C' 2M 1KEY				05
140	**VB205200**	Bind Head Tapping Screw-P	3.0X16 MFZN2BL			21	01
140	**VS756700**	Bind Head Tapping Screw-P	3.0X16 MFZN2B			21	01
150	**TX920280**	Grease	G-31KA				10
160	**--**	Circuit Board Assembly	KBD SW		(V269470)		
	--	Circuit Board Assembly	KBD SW		(V269470)		
S1	**VU648100**	Circuit Board	MK-L				09
S2	**VU648200**	Circuit Board	MK-H				09
S3	**V2404900**	Circuit Board	MKS3				10
S4	**VU958900**	Cable	12P 190L				03
S5	**VU659500**	Cable	12P 215L				02
S6	**VU659400**	Cable	7P 250L				02
S7	**VU659600**	Cable	5P 615L				02

✻: New Parts

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ELECTRICAL PARTS

	REF NO.	PART NO.	DESCRIPTION			REMARKS		QTY	RANK
			ELECTRICAL PARTS			PSR-740/640			
*		V3866000	Circuit Board	AM		PSR-740	(XV859B0)		
*		V3505000	Circuit Board	AM		PSR-640	(XV859B0)		
*		V3200400	Circuit Board	DM		PSR-740	(XW116B0)		
*		V3505100	Circuit Board	DM		PSR-640	(XV862C0)		
*		V4200400	Circuit Board	INV			(XW193B0)		
*		V3865800	Circuit Board	JACK		PSR-740	(XW135B0)		
		V4639400	Circuit Board	JACK		PSR-640	(XW135B0)		
*		V4201700	Circuit Board	MIC		PSR-740	(XW384B0)		
*		V4201800	Circuit Board	MIC-JACK		PSR-740	(XW384B0)		
		VU648100	Circuit Board	MK-L			(XR564B0)		09
		VU648200	Circuit Board	MK-H			(XR565B0)		09
		V2404900	Circuit Board	MKS3			(XU878B0)		10
*		V3866700	Circuit Board	PN		PSR-740	(XW115B0)		
*		V3866800	Circuit Board	PN		PSR-640	(XW115B0)		
*		V3866000	Circuit Board	AM		PSR-740	(XV859B0)		
*		V3505000	Circuit Board	AM		PSR-640	(XV859B0)		
		EP600190	Bind Head Tapping Screw-B	3.0X8 MFZN2BL				3	01
		EP600220	Bind Head Tapping Screw-B	3.0X10 MFZN2Y				2	01
		VA078900	Jumper Wire	0.55				27	
	C0101	UR749680	Electrolytic Cap.	6800 25.0V					
	C0102	UR866100	Electrolytic Cap.	1.00 50.0V					01
	C0103	UR866100	Electrolytic Cap.	1.00 50.0V					01
	C0104	FG613560	Ceramic Capacitor-B	5600P 50V K					01
	C0105	FG613560	Ceramic Capacitor-B	5600P 50V K					01
	C0201	FG612560	Ceramic Capacitor-B	560P 50V K					01
	C0202	UR837100	Electrolytic Cap.	10.00 16.0V					01
	C0203	VR169400	Monolithic Mylar Capacitor	ECQ-V1H684JL3					
	C0204	VR169300	Monolithic Mylar Capacitor	ECQ-V1H564JL3					01
	C0205	VU838100	Monolithic Mylar Capacitor	ECQ-V1H105JL3					
	C0206	VR168900	Monolithic Mylar Capacitor	ECQ-V1H274JL3					01
	C0207	UA355100	Mylar Capacitor	0.1000 50V J					01
	C0208	VR168400	Monolithic Mylar Capacitor	ECQ-V1H124JL3					01
	C0209	UA354270	Mylar Capacitor	0.0270 50V J					01
	C0210	UA354180	Mylar Capacitor	0.0180 50V J					01
	C0215	UA354220	Mylar Capacitor	0.0220 50V J					
	C0216	UA653680	Mylar Capacitor	6800P 50V J					01
	C0217	UR837470	Electrolytic Cap.	47.00 16.0V					01
	C0218	VC694800	Semiconductive Cera. Cap.	0.1000 25V Z					01
	C0219	FG612560	Ceramic Capacitor-B	560P 50V K					01
	C0220	UR837100	Electrolytic Cap.	10.00 16.0V					01
	C0221	VR169400	Monolithic Mylar Capacitor	ECQ-V1H684JL3					
	C0222	VR169300	Monolithic Mylar Capacitor	ECQ-V1H564JL3					01
	C0223	VU838100	Monolithic Mylar Capacitor	ECQ-V1H105JL3					
	C0224	VR168900	Monolithic Mylar Capacitor	ECQ-V1H274JL3					01
	C0225	UA355100	Mylar Capacitor	0.1000 50V J					01
	C0226	VR168400	Monolithic Mylar Capacitor	ECQ-V1H124JL3					01
	C0227	UA354270	Mylar Capacitor	0.0270 50V J					01
	C0228	UA354180	Mylar Capacitor	0.0180 50V J					01
	C0233	UA354220	Mylar Capacitor	0.0220 50V J					
	C0234	UA353680	Mylar Capacitor	6800P 50V J					01
	C0235	UR837470	Electrolytic Cap.	47.00 16.0V					01
	C0236	VC694800	Semiconductive Cera. Cap.	0.1000 25V Z					01
	C0301	UN837100	Electrolytic Cap.-BP	10.00 16.0V					01
	C0302	UN837100	Electrolytic Cap.-BP	10.00 16.0V					01
	C0303	FG652100	Ceramic Capacitor-SL	100P 50V J					01
	C0304	FG652100	Ceramic Capacitor-SL	100P 50V J					01
	C0307	UR837100	Electrolytic Cap.	10.00 16.0V					01
	C0309	VC694800	Semiconductive Cera. Cap.	0.1000 25V Z					01
	C0310	UN837100	Electrolytic Cap.-BP	10.00 16.0V					01
	C0311	UN837100	Electrolytic Cap.-BP	10.00 16.0V					01
	C0312	UR847100	Electrolytic Cap.	10.00 25.0V					01
	C0313	UR838100	Electrolytic Cap.	100.00 16.0V					01
	C0314	UR837100	Electrolytic Cap.	10.00 16.0V					01
	C0316	FG652100	Ceramic Capacitor-SL	100P 50V J					01
	C0401	UR866220	Electrolytic Cap.	2.20 50.0V					01
	C0402	UR866220	Electrolytic Cap.	2.20 50.0V					01
	C0405	VC694800	Semiconductive Cera. Cap.	0.1000 25V Z					01
	C0411	UR837470	Electrolytic Cap.	47.00 16.0V					01

✻: New Parts

RANK: Japan only

REF NO.	PART NO.	DESCRIPTION			REMARKS	QTY	RANK
C0412	**UR837470**	Electrolytic Cap.	47.00 16.0V				01
C0501	**UN837100**	Electrolytic Cap.-BP	10.00 16.0V				01
C0502	**UN837100**	Electrolytic Cap.-BP	10.00 16.0V				01
C0503	**FG652100**	Ceramic Capacitor-SL	100P 50V J				01
C0504	**FG652100**	Ceramic Capacitor-SL	100P 50V J				01
C0505	**UR837100**	Electrolytic Cap.	10.00 16.0V				01
C0506	**VC694800**	Semiconductive Cera. Cap.	0.1000 25V Z				01
C0510	**UR837100**	Electrolytic Cap.	10.00 16.0V				01
C0511	**UR837100**	Electrolytic Cap.	10.00 16.0V				01
C0512	**UA654150**	Mylar Capacitor	0.0150 50V J				01
C0513	**UA654150**	Mylar Capacitor	0.0150 50V J				01
C0514	**UA313150**	Mylar Capacitor	0.0015 50V K				01
C0515	**UA313150**	Mylar Capacitor	0.0015 50V K				01
C0522	**VR168500**	Monolithic Mylar Capacitor	0.1500 50V J				01
C0523	**VR168500**	Monolithic Mylar Capacitor	0.1500 50V J				01
C0524	**UA654150**	Mylar Capacitor	0.0150 50V J				01
C0525	**UA654150**	Mylar Capacitor	0.0150 50V J				01
C0601	**UR866470**	Electrolytic Cap.	4.70 50.0V				01
C0602	**UR866470**	Electrolytic Cap.	4.70 50.0V				01
C0603	**UR838100**	Electrolytic Cap.	100.00 16.0V				01
C0604	**UR848100**	Electrolytic Cap.	100.00 25.0V				01
C0605	**VC694800**	Semiconductive Cera. Cap.	0.1000 25V Z				01
C0606	**UR838220**	Electrolytic Cap.	220.00 16.0V				01
C0607	**UR838220**	Electrolytic Cap.	220.00 16.0V				01
C0608	**UR837220**	Electrolytic Cap.	22.00 16.0V				01
C0609	**FG613220**	Ceramic Capacitor-B	2200P 50V K				01
C0610	**FG613220**	Ceramic Capacitor-B	2200P 50V K				01
C0701	**VT757800**	Monolithic Ceramic Cap.	1.000 25V Z				01
C0702	**VT757800**	Monolithic Ceramic Cap.	1.000 25V Z				01
C0703	**FG612470**	Ceramic Capacitor-B	470P 50V K				01
C0704	**FG612470**	Ceramic Capacitor-B	470P 50V K				01
C0705	**UR837330**	Electrolytic Cap.	33.00 16.0V				01
C0706	**UR838100**	Electrolytic Cap.	100.00 16.0V				01
C0707	**UR848100**	Electrolytic Cap.	100.00 25.0V				01
C0708	**VC694800**	Semiconductive Cera. Cap.	0.1000 25V Z				01
C0709	**UA654470**	Mylar Capacitor	0.0470 50V J				01
-0712	**UA654470**	Mylar Capacitor	0.0470 50V J				01
C0713	**UR865470**	Electrolytic Cap.	0.47 50.0V				01
C0715	**UR838100**	Electrolytic Cap.	100.00 16.0V				01
CN110	**VK025300**	Wire Trap	52147 9P TE				01
CN120	**VI878400**	Cable Holder	51048 6P TE				01
CN130	**VI878400**	Cable Holder	51048 6P TE				01
CN140	**VI878300**	Cable Holder	51048 5P TE				01
CN150	**VI878300**	Cable Holder	51048 5P TE				01
CN310	**VI878300**	Cable Holder	51048 5P TE				01
CN320	**VI878200**	Cable Holder	51048 4P TE				01
CN410	**VK024900**	Wir Trap	52147 5P TE				01
CN420	**VI878300**	Cable Holder	51048 5P TE				01
CN610	**LB918040**	Base Post Connector	XH 4P TE				01
CN620	**LB918050**	Base Post Connector	XH 5P TE				01
D0101	**VR313500**	Diode	S3V20				01
* HS100	**V3822000**	Heat Sink	25BS098H-L35				
IC210	**XF751A00**	IC	M5227P		EQUALIZER		04
IC220	**XF751A00**	IC	M5227P		EQUALIZER		04
IC310	**XQ774A00**	IC	PQ09RA1		REGULATOR +9V		03
IC320	**XB247A00**	IC	UPC4570HA		OP AMP		02
IC410	**XM217A00**	IC	LA4525		POWER AMP. 0.65W 2CH		03
IC510	**XB247A00**	IC	UPC4570HA		OP AMP		02
IC610	**XW812A0**	IC	LA4262		POWER AMP. 7.0W 2CH		03
IC710	**XQ619A00**	IC	LA4705NA		POWER AMP. 17W		05
J0101	**VA078900**	Jumper Wire	0.55				
J0302	**VA078900**	Jumper Wire	0.55				
J0602	**VA078900**	Jumper Wire	0.55				
JK410	**LB101870**	Phone Jack	YKB21-5006		PHONES		03
L0401	**VB835000**	Coil	FL5R200QNT 20uH				01
-0403	**VB835000**	Coil	FL5R200QNT 20uH				01
R0101	**HF758100**	Carbon Resistor	100.0K 1/4 J				01
R0102	**HF758100**	Carbon Resistor	100.0K 1/4 J				01
R0103	**HF755680**	Carbon Resistor	680.0 1/4 J				01
R0104	**HF755680**	Carbon Resistor	680.0 1/4 J				01

✻: New Parts

RANK: Japan only

REF NO.	PART NO.	DESCRIPTION			REMARKS	QTY	RANK
R0105	**HF756220**	Carbon Resistor	2.2K 1/4 J				01
R0106	**HF756220**	Carbon Resistor	2.2K 1/4 J				01
R0202	**HF756330**	Carbon Resistor	3.3K 1/4 J				01
R0203	**HF757220**	Carbon Resistor	22.0K 1/4 J				01
R0204	**HF754100**	Carbon Resistor	10.0 1/4 J				01
R0205	**HF757220**	Carbon Resistor	22.0K 1/4 J				01
R0206	**HF757180**	Carbon Resistor	18.0K 1/4 J				01
R0209	**HF757180**	Carbon Resistor	18.0K 1/4 J				01
R0210	**HF756150**	Carbon Resistor	1.5K 1/4 J				01
R0213	**HF756150**	Carbon Resistor	1.5K 1/4 J				01
R0214	**HF756120**	Carbon Resistor	1.2K 1/4 J				01
R0215	**HF757220**	Carbon Resistor	22.0K 1/4 J				01
R0216	**HF755330**	Carbon Resistor	330.0 1/4 J				01
R0217	**HF756470**	Carbon Resistor	4.7K 1/4 J				01
R0219	**HF756330**	Carbon Resistor	3.3K 1/4 J				01
R0220	**HF757220**	Carbon Resistor	22.0K 1/4 J				01
R0221	**HF754100**	Carbon Resistor	10.0 1/4 J				01
R0222	**HF757220**	Carbon Resistor	22.0K 1/4 J				01
R0223	**HF757180**	Carbon Resistor	18.0K 1/4 J				01
R0226	**HF757180**	Carbon Resistor	18.0K 1/4 J				01
R0227	**HF756150**	Carbon Resistor	1.5K 1/4 J				01
R0230	**HF756150**	Carbon Resistor	1.5K 1/4 J				01
R0231	**HF756120**	Carbon Resistor	1.2K 1/4 J				01
R0232	**HF757220**	Carbon Resistor	22.0K 1/4 J				01
R0233	**HF755330**	Carbon Resistor	330.0 1/4 J				01
R0234	**HF755560**	Carbon Resistor	560.0 1/4 J				01
R0235	**HF756470**	Carbon Resistor	4.7K 1/4 J				01
R0236	**HF755560**	Carbon Resistor	560.0 1/4 J				01
R0301	**HF757220**	Carbon Resistor	22.0K 1/4 J				01
R0302	**HF757220**	Carbon Resistor	22.0K 1/4 J				01
R0303	**HF758470**	Carbon Resistor	470.0K 1/4 J				01
R0304	**HF758470**	Carbon Resistor	470.0K 1/4 J				01
R0305	**HF757330**	Carbon Resistor	33.0K 1/4 J				01
R0306	**HF757330**	Carbon Resistor	33.0K 1/4 J				01
R0307	**HF757150**	Carbon Resistor	15.0K 1/4 J				01
R0308	**HF757150**	Carbon Resistor	15.0K 1/4 J				01
R0310	**HF756220**	Carbon Resistor	2.2K 1/4 J				01
R0311	**HF756220**	Carbon Resistor	2.2K 1/4 J				01
R0312	**HF756470**	Carbon Resistor	4.7K 1/4 J				01
R0314	**HF757100**	Carbon Resistor	10.0K 1/4 J				01
R0315	**HF757100**	Carbon Resistor	10.0K 1/4 J				01
R0401	**HF757470**	Carbon Resistor	47.0K 1/4 J				01
R0402	**HF757470**	Carbon Resistor	47.0K 1/4 J				01
R0403	**HF756390**	Carbon Resistor	3.9K 1/4 J				01
R0404	**HF756390**	Carbon Resistor	3.9K 1/4 J				01
R0410	**HF755100**	Carbon Resistor	100.0 1/4 J				01
R0411	**HF755100**	Carbon Resistor	100.0 1/4 J				01
R0412	**HF755330**	Carbon Resistor	330.0 1/4 J				01
R0413	**HF755330**	Carbon Resistor	330.0 1/4 J				01
R0501	**HF757470**	Carbon Resistor	47.0K 1/4 J				01
R0502	**HF757470**	Carbon Resistor	47.0K 1/4 J				01
R0503	**HF758470**	Carbon Resistor	470.0K 1/4 J		PSR-740		01
R0503	**HF757390**	Carbon Resistor	39.0K 1/4 J		PSR-640		01
R0504	**HF758470**	Carbon Resistor	470.0K 1/4 J		PSR-740		01
R0504	**HF757390**	Carbon Resistor	39.0K 1/4 J		PSR-640		01
R0505	**HF757270**	Carbon Resistor	27.0K 1/4 J				01
-0508	**HF757270**	Carbon Resistor	27.0K 1/4 J				01
R0510	**HF756220**	Carbon Resistor	2.2K 1/4 J				01
R0511	**HF756220**	Carbon Resistor	2.2K 1/4 J				01
R0512	**HF757220**	Carbon Resistor	22.0K 1/4 J				01
R0513	**HF757220**	Carbon Resistor	22.0K 1/4 J				01
R0521	**HF755180**	Carbon Resistor	180.0 1/4 J				01
R0522	**HF755180**	Carbon Resistor	180.0 1/4 J				01
R0523	**HF756390**	Carbon Resistor	3.9K 1/4 J				01
R0524	**HF756390**	Carbon Resistor	3.9K 1/4 J				01
R0601	**HF756330**	Carbon Resistor	3.3K 1/4 J				01
R0602	**HF756330**	Carbon Resistor	3.3K 1/4 J				01
R0603	**HF756180**	Carbon Resistor	1.8K 1/4 J		PSR-740		01
R0603	**HF756220**	Carbon Resistor	2.2K 1/4 J		PSR-640		01
R0604	**HF756180**	Carbon Resistor	1.8K 1/4 J		PSR-740		01

✻: New Parts

RANK: Japan only

REF NO.	PART NO.	DESCRIPTION			REMARKS	QTY	RANK
R0604	**HF756220**	Carbon Resistor	2.2K 1/4 J		PSR-640		01
R0605	**HF756220**	Carbon Resistor	2.2K 1/4 J				01
R0701	**HF757470**	Carbon Resistor	47.0K 1/4 J				01
R0702	**HF757470**	Carbon Resistor	47.0K 1/4 J				01
R0703	**HF757180**	Carbon Resistor	18.0K 1/4 J				01
R0704	**HF757180**	Carbon Resistor	18.0K 1/4 J				01
R0705	**HF757100**	Carbon Resistor	10.0K 1/4 J				01
R0706	**HF753220**	Carbon Resistor	2.2 1/4 J				01
R0707	**HF753220**	Carbon Resistor	2.2 1/4 J				01
R0710	**HF753220**	Carbon Resistor	2.2 1/4 J				01
R0711	**HF753220**	Carbon Resistor	2.2 1/4 J				01
R0715	**HF756820**	Carbon Resistor	8.2K 1/4 J				01
R0716	**HF757220**	Carbon Resistor	22.0K 1/4 J				01
-0718	**HF757220**	Carbon Resistor	22.0K 1/4 J				01
SW110	**VY980400**	Push Switch	SDDLB1 J,UC,CEE		STANDBY/ON		03
TR310	**IC174070**	Transistor	2SC1740S R,S				01
TR710	**IC174070**	Transistor	2SC1740S R,S				01
TR720	**IC174070**	Transistor	2SC1740S R,S				01
VR110	**VZ048400**	Rotary Variable Resistor	A10.0K XV0141GPVN2		MASTER VOLUME		02
W0010	**--**	Connector Assembly	AM-VR		(V379800)		
W0020	**--**	Connector Assembly	AM-HP		(V379810)		
W0030	**--**	Connector Assembly	AM-PSW		(V379820)		
W0040	**--**	Connector Assembly	AM-DM1		(V379840)		
W0050	**--**	Connector Assembly	AM-DM2		(V379850)		
*	**V3200400**	Circuit Board	DM		PSR-740 (XW116B0)		
	EP600190	Bind Head Tapping Screw-B	3.0X8 MFZN2BL				01
C0001	**VR641000**	Electrolytic Cap.	1000.0 25.0				02
C0002	**UR847100**	Electrolytic Cap.	10.00 25.0V				01
C0003	**UB044100**	Monolithic Ceramic Cap.	F 0.010 50V Z				01
C0004	**UB044100**	Monolithic Ceramic Cap.	F 0.010 50V Z				01
C0005	**UB012470**	Monolithic Ceramic Cap.	B 470P 50V K				01
C0006	**UB012330**	Monolithic Ceramic Cap.	B 330P 50V K				01
C0007	**UB012470**	Monolithic Ceramic Cap.	B 470P 50V K				01
C0008	**UB044100**	Monolithic Ceramic Cap.	F 0.010 50V Z				01
C0009	**UB044100**	Monolithic Ceramic Cap.	F 0.010 50V Z				01
C0010	**UB012470**	Monolithic Ceramic Cap.	B 470P 50V K				01
C0011	**UB052100**	Monolithic Ceramic Cap.	SL 100P 50V J				01
C0012	**UB052100**	Monolithic Ceramic Cap.	SL 100P 50V J				01
C0013	**UB012470**	Monolithic Ceramic Cap.	B 470P 50V K				01
C0014	**UB052100**	Monolithic Ceramic Cap.	SL 100P 50V J				01
C0015	**UB045100**	Monolithic Ceramic Cap.	F 0.100 50V Z				01
C0016	**UB012470**	Monolithic Ceramic Cap.	B 470P 50V K				01
C0017	**UB052100**	Monolithic Ceramic Cap.	SL 100P 50V J				01
C0018	**UB052100**	Monolithic Ceramic Cap.	SL 100P 50V J				01
C0019	**UB012470**	Monolithic Ceramic Cap.	B 470P 50V K				01
C0020	**UB052100**	Monolithic Ceramic Cap.	SL 100P 50V J				01
C0021	**UB052100**	Monolithic Ceramic Cap.	SL 100P 50V J				01
C0022	**UB012470**	Monolithic Ceramic Cap.	B 470P 50V K				01
C0023	**UB052100**	Monolithic Ceramic Cap.	SL 100P 50V J				01
C0024	**UB012470**	Monolithic Ceramic Cap.	B 470P 50V K				01
C0025	**UB052100**	Monolithic Ceramic Cap.	SL 100P 50V J				01
C0026	**UB012470**	Monolithic Ceramic Cap.	B 470P 50V K				01
C0027	**UB044100**	Monolithic Ceramic Cap.	F 0.010 50V Z				01
C0028	**UB012470**	Monolithic Ceramic Cap.	B 470P 50V K				01
C0029	**UB012470**	Monolithic Ceramic Cap.	B 470P 50V K				01
C0030	**UR837100**	Electrolytic Cap.	10.00 16.0V				01
C0031	**UB012470**	Monolithic Ceramic Cap.	B 470P 50V K				01
C0032	**UB044100**	Monolithic Ceramic Cap.	F 0.010 50V Z				01
C0033	**UR818100**	Electrolytic Cap.	100.00 6.3V				01
C0034	**UR819100**	Electrolytic Cap.	1000 6.3V				01
C0035	**UR837100**	Electrolytic Cap.	10.00 16.0V				01
C0036	**UB044100**	Monolithic Ceramic Cap.	F 0.010 50V Z				01
C0039	**UB044100**	Monolithic Ceramic Cap.	F 0.010 50V Z				01
C0040	**UB044100**	Monolithic Ceramic Cap.	F 0.010 50V Z				01
C0041	**UR837100**	Electrolytic Cap.	10.00 16.0V				01
C0042	**UB044100**	Monolithic Ceramic Cap.	F 0.010 50V Z				01
-0046	**UB044100**	Monolithic Ceramic Cap.	F 0.010 50V Z				01
C0047	**UR837100**	Electrolytic Cap.	10.00 16.0V				01
C0048	**UB044100**	Monolithic Ceramic Cap.	F 0.010 50V Z				01

✻: New Parts

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REF NO.	PART NO.	DESCRIPTION			REMARKS	QTY	RANK
C0049	**UB012470**	Monolithic Ceramic Cap.	B 470P 50V K				01
C0050	**UB051270**	Monolithic Ceramic Cap.	SL 27P 50V J				01
C0051	**UB051270**	Monolithic Ceramic Cap.	SL 27P 50V J				01
C0052	**UB044100**	Monolithic Ceramic Cap.	F 0.010 50V Z				01
C0053	**UB044100**	Monolithic Ceramic Cap.	F 0.010 50V Z				01
C0054	**UR837100**	Electrolytic Cap.	10.00 16.0V				01
C0055	**UB044100**	Monolithic Ceramic Cap.	F 0.010 50V Z				01
C0056	**UR837100**	Electrolytic Cap.	10.00 16.0V				01
C0057	**UB044100**	Monolithic Ceramic Cap.	F 0.010 50V Z				01
C0058	**VI055000**	Super Capacitor	0.100F 5.5V FYD0H				04
C0059	**UB044100**	Monolithic Ceramic Cap.	F 0.010 50V Z				01
-0071	**UB044100**	Monolithic Ceramic Cap.	F 0.010 50V Z				01
C0072	**UR837100**	Electrolytic Cap.	10.00 16.0V				01
C0073	**UB044100**	Monolithic Ceramic Cap.	F 0.010 50V Z				01
C0074	**UR818100**	Electrolytic Cap.	100.00 6.3V				01
C0075	**UB044100**	Monolithic Ceramic Cap.	F 0.010 50V Z				01
-0077	**UB044100**	Monolithic Ceramic Cap.	F 0.010 50V Z				01
C0078	**UB052100**	Monolithic Ceramic Cap.	SL 100P 50V J				01
C0079	**UB052100**	Monolithic Ceramic Cap.	SL 100P 50V J				01
C0080	**UB044100**	Monolithic Ceramic Cap.	F 0.010 50V Z				01
C0081	**UB052100**	Monolithic Ceramic Cap.	SL 100P 50V J				01
C0082	**UB052100**	Monolithic Ceramic Cap.	SL 100P 50V J				01
C0083	**UB044100**	Monolithic Ceramic Cap.	F 0.010 50V Z				01
C0084	**UB052100**	Monolithic Ceramic Cap.	SL 100P 50V J				01
-0095	**UB052100**	Monolithic Ceramic Cap.	SL 100P 50V J				01
C0096	**UR837100**	Electrolytic Cap.	10.00 16.0V				01
C0097	**UB052100**	Monolithic Ceramic Cap.	SL 100P 50V J				01
-0105	**UB052100**	Monolithic Ceramic Cap.	SL 100P 50V J				01
C0106	**UB044100**	Monolithic Ceramic Cap.	F 0.010 50V Z				01
C0107	**UB052100**	Monolithic Ceramic Cap.	SL 100P 50V J				01
C0108	**UB044100**	Monolithic Ceramic Cap.	F 0.010 50V Z				01
C0109	**UR818100**	Electrolytic Cap.	100.00 6.3V				01
C0110	**UB044100**	Monolithic Ceramic Cap.	F 0.010 50V Z				01
-0115	**UB044100**	Monolithic Ceramic Cap.	F 0.010 50V Z				01
C0116	**UR818100**	Electrolytic Cap.	100.00 6.3V				01
C0117	**UB044100**	Monolithic Ceramic Cap.	F 0.010 50V Z				01
C0118	**UR837220**	Electrolytic Cap.	22.00 16.0V				01
C0119	**UB045100**	Monolithic Ceramic Cap.	F 0.100 50V Z				01
C0120	**UB044100**	Monolithic Ceramic Cap.	F 0.010 50V Z				01
C0121	**UB045100**	Monolithic Ceramic Cap.	F 0.100 50V Z				01
C0122	**UB052100**	Monolithic Ceramic Cap.	SL 100P 50V J				01
C0123	**UB051100**	Monolithic Ceramic Cap.	SL 10P 50V D				01
C0124	**UB044100**	Monolithic Ceramic Cap.	F 0.010 50V Z				01
C0125	**UB051100**	Monolithic Ceramic Cap.	SL 10P 50V D				01
C0126	**UB044100**	Monolithic Ceramic Cap.	F 0.010 50V Z				01
-0137	**UB044100**	Monolithic Ceramic Cap.	F 0.010 50V Z				01
C0138	**UR818100**	Electrolytic Cap.	100.00 6.3V				01
C0139	**UB044100**	Monolithic Ceramic Cap.	F 0.010 50V Z				01
C0140	**UB044100**	Monolithic Ceramic Cap.	F 0.010 50V Z				01
C0141	**UR818100**	Electrolytic Cap.	100.00 6.3V				01
C0142	**UB044100**	Monolithic Ceramic Cap.	F 0.010 50V Z				01
C0143	**UB044100**	Monolithic Ceramic Cap.	F 0.010 50V Z				01
C0144	**UR837100**	Electrolytic Cap.	10.00 16.0V				01
C0145	**UB044100**	Monolithic Ceramic Cap.	F 0.010 50V Z				01
C0146	**UB044100**	Monolithic Ceramic Cap.	F 0.010 50V Z				01
C0147	**UR837100**	Electrolytic Cap.	10.00 16.0V				01
C0148	**UR837100**	Electrolytic Cap.	10.00 16.0V				01
C0149	**UB044100**	Monolithic Ceramic Cap.	F 0.010 50V Z				01
C0150	**UB044100**	Monolithic Ceramic Cap.	F 0.010 50V Z				01
C0151	**UR837100**	Electrolytic Cap.	10.00 16.0V				01
C0152	**UB044100**	Monolithic Ceramic Cap.	F 0.010 50V Z				01
C0153	**UB044100**	Monolithic Ceramic Cap.	F 0.010 50V Z				01
C0154	**UR866470**	Electrolytic Cap.	4.70 50.0V				01
C0155	**UB044100**	Monolithic Ceramic Cap.	F 0.010 50V Z				01
C0156	**UB044100**	Monolithic Ceramic Cap.	F 0.010 50V Z				01
C0157	**UR837100**	Electrolytic Cap.	10.00 16.0V				01
C0158	**UR837100**	Electrolytic Cap.	10.00 16.0V				01
C0159	**UR866470**	Electrolytic Cap.	4.70 50.0V				01
C0160	**UB044100**	Monolithic Ceramic Cap.	F 0.010 50V Z				01
C0161	**UR818100**	Electrolytic Cap.	100.00 6.3V				01

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	REF NO.	PART NO.	DESCRIPTION			REMARKS	QTY	RANK
	C0162	**UB044100**	Monolithic Ceramic Cap.	F 0.010 50V Z				01
	C0163	**UR837100**	Electrolytic Cap.	10.00 16.0V				01
	C0164	**UR837100**	Electrolytic Cap.	10.00 16.0V				01
	C0165	**UB013100**	Monolithic Ceramic Cap.	B 1000P 50V K				01
	C0166	**UR837100**	Electrolytic Cap.	10.00 16.0V				01
	C0167	**UB052150**	Monolithic Ceramic Cap.	SL 150P 50V J				01
	C0168	**UR837100**	Electrolytic Cap.	10.00 16.0V				01
	C0169	**UR837100**	Electrolytic Cap.	10.00 16.0V				01
	C0170	**UB052150**	Monolithic Ceramic Cap.	SL 150P 50V J				01
	C0171	**UB044100**	Monolithic Ceramic Cap.	F 0.010 50V Z				01
	C0172	**UR837100**	Electrolytic Cap.	10.00 16.0V				01
	C0173	**UR866100**	Electrolytic Cap.	1.00 50.0V				01
	C0174	**UB044100**	Monolithic Ceramic Cap.	F 0.010 50V Z				01
	C0200	**UB045100**	Monolithic Ceramic Cap.	F 0.100 50V Z				01
	C0201	**UB044100**	Monolithic Ceramic Cap.	F 0.010 50V Z				01
	C0202	**UB044100**	Monolithic Ceramic Cap.	F 0.010 50V Z				01
	C0203	**UB045100**	Monolithic Ceramic Cap.	F 0.100 50V Z				01
*	C0204	**UB045100**	Monolithic Ceramic Cap.	F 0.100 50V Z				01
*	C0205	**UB044100**	Monolithic Ceramic Cap.	F 0.010 50V Z				01
	C0206	**UB045100**	Monolithic Ceramic Cap.	F 0.100 50V Z				01
	C0207	**UB052100**	Monolithic Ceramic Cap.	SL 100P 50V J				01
	-0216	**UB052100**	Monolithic Ceramic Cap.	SL 100P 50V J				01
	CN001	**VQ391300**	Connector	34P TE				03
	CN002	**VK024900**	Wire Trap	52147 5P TE				01
	CN003	**VK024600**	Wire Trap	52147 2P TE				01
	CN004	**VK025700**	Wire Trap	52147 13P TE				01
	CN005	**VK025200**	Wire Trap	52147 8P TE				01
	CN006	**VF728300**	Wire Trap	52147 6P TE				01
	CN007	**VB389800**	Connector Base Post	PH- 2P TE				01
	CN008	**LB918030**	Base Post Connector	XH 3P TE				01
	CN009	**VK025600**	Wire Trap	52147 12P TE				01
	CN010	**VK025200**	Wire Trap	52147 8P TE				01
	CN011	**VK025700**	Wire Trap	52147 13P TE				01
	CN012	**VK025500**	Wire Trap	52147 11P TE				01
	CN014	**VK024800**	Wire Trap	52147 4P TE				01
	CN015	**VK024700**	Wire Trap	52147 3P TE				01
	D0001	**VZ060500**	Diode	SFPB-62V				01
	D0002	**VB493900**	Diode	MA221				01
	-0009	**VB493900**	Diode	MA221				01
	IC001	**XT676A00**	IC	AN77L09-TA		REGULATOR +9V		03
	IC002	**XR858A00**	IC	M5291FP-600C		DC-DC CONVERTER		03
	IC003	**XJ757A00**	IC	NJM78L05A-T3		REGULATOR +5V		01
*	IC004	**XW485100**	IC			CPU		
	IC005	**XI939A00**	IC	HD63266F		FDC		09
	IC006	**XP226A00**	IC	IC-PST591DMT		RESET		03
	IC007	**XV077A00**	IC	MSM514260C-60JS		DRAM 4M		07
	IC008	**XV077A00**	IC	MSM514260C-60JS		DRAM 4M		07
	IC009	**XV976A00**	IC	M5M51008CFP-70H		SRAM 1M		07
	IC010	**XC723A00**	IC	SN74HCU04NSR		INVERTER		01
*	IC011	**XW186C00**	IC	MB8502F016FA-90PS		EPROM MAIN1 32M		
*	IC012	**XW187C00**	IC	MB8502F016FA-90PS		EPROM MAIN2 32M		
	IC013	**XM970A00**	IC	TC74HC138AF		DECODER		02
	IC014	**XN241A00**	IC	TC74HC32AF		OR		01
	IC015	**XD831A00**	IC	SN74HC08NSR		AND		01
	IC016	**XC723A00**	IC	SN74HCU04NSR		INVERTER		01
	IC017	**XQ595A00**	IC	SED1335F0B		LCDC		08
	IC018	**XQ042A00**	IC	SN74HC374ANSR		D-FF		03
	IC019	**XM970A00**	IC	TC74HC138AF		DECODER		02
	IC020	**XQ042A00**	IC	SN74HC374ANSR		D-FF		03
	IC021	**XN279C00**	IC	M5M5256DFP-70LL		SRAM 256K		07
	IC022	**XS725A00**	IC	TC203C760HF-002		SWP30B		19
	IC023	**XT013A00**	IC	YSS236-F		VOP3		13
	IC024	**XV077A00**	IC	MSM514260C-60JS		DRAM 4M		07
	IC025	**XV077A00**	IC	MSM514260C-60JS		DRAM 4M		07
*	IC026	**XW188100**	IC			WAVE ROM LL 32M		
*	IC027	**XW190100**	IC			WAVE ROM HL 32M		
	IC028	**XS516A00**	IC	UPC2933T-E1		REGULATOR +3.3V		03
	IC029	**XV510A00**	IC	AK5351-VF-E2		ADC		08
*	IC030	**XW189100**	IC			WAVE ROM LH 16M		
*	IC031	**XW191100**	IC			WAVE ROM HH 16M		

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	REF NO.	PART NO.	DESCRIPTION			REMARKS	QTY	RANK
	IC032	**XU829A00**	IC	PCM1716E		DAC		06
*	IC033	**XV117A00**	IC	M5223AFP		OP AMP		
	L0001	**VN381200**	Coil	SNT-D20TF 10uH				03
	L0002	**VQ724900**	Chip Inductance	BK2125HM601-T				01
	-0011	**VQ724900**	Chip Inductance	BK2125HM601-T				01
	L0012	**VZ060700**	Choke Coil	220U ELC15E221 15E				05
	L0013	**VR243700**	Chip Inductance	56U LEM2520 T 560J				01
	L0014	**VQ724900**	Chip Inductance	BK2125HM601-T				01
	L0015	**VQ724900**	Chip Inductance	BK2125HM601-T				01
	L0016	**RD250000**	Carbon Resistor (chip)	0.0 0.0 J				01
	L0017	**VQ724900**	Chip Inductance	BK2125HM601-T				01
	R0001	**RD257470**	Carbon Resistor (chip)	47.0K 0.1 J				01
	-0007	**RD257470**	Carbon Resistor (chip)	47.0K 0.1 J				01
	R0008	**RD255100**	Carbon Resistor (chip)	100.0 0.1 J				01
	-0011	**RD255100**	Carbon Resistor (chip)	100.0 0.1 J				01
	R0012	**RD257470**	Carbon Resistor (chip)	47.0K 0.1 J				01
	R0013	**RD257470**	Carbon Resistor (chip)	47.0K 0.1 J				01
	R0014	**RD257100**	Carbon Resistor (chip)	10.0K 0.1 J				01
	R0015	**RD257470**	Carbon Resistor (chip)	47.0K 0.1 J				01
	R0016	**RD255100**	Carbon Resistor (chip)	100.0 0.1 J				01
	-0018	**RD255100**	Carbon Resistor (chip)	100.0 0.1 J				01
	R0019	**RD257470**	Carbon Resistor (chip)	47.0K 0.1 J				01
	R0020	**RD258100**	Carbon Resistor (chip)	100.0K 0.1 J				01
	R0021	**RD257470**	Carbon Resistor (chip)	47.0K 0.1 J				01
	R0022	**RD258100**	Carbon Resistor (chip)	100.0K 0.1 J				01
	R0023	**V3648000**	Metal Film Resistor	0.15 1W J				01
	R0024	**HF755330**	Carbon Resistor	330.0 1/4 J				01
	R0025	**VC745000**	Metal Oxide Film Resistor	100.0 1W J				01
	R0026	**RD256390**	Carbon Resistor (chip)	3.9K 0.1 J				01
	R0027	**RD256120**	Carbon Resistor (chip)	1.2K 0.1 J				01
	R0028	**RD256100**	Carbon Resistor (chip)	1.0K 0.1 J				01
	R0029	**RD255330**	Carbon Resistor (chip)	330.0 0.1 J				01
	-0034	**RD255330**	Carbon Resistor (chip)	330.0 0.1 J				01
	R0035	**RD256100**	Carbon Resistor (chip)	1.0K 0.1 J				01
	-0037	**RD256100**	Carbon Resistor (chip)	1.0K 0.1 J				01
	R0038	**RD255330**	Carbon Resistor (chip)	330.0 0.1 J				01
	R0039	**RD256100**	Carbon Resistor (chip)	1.0K 0.1 J				01
	R0040	**RD257470**	Carbon Resistor (chip)	47.0K 0.1 J				01
	-0049	**RD257470**	Carbon Resistor (chip)	47.0K 0.1 J				01
	R0050	**RD257100**	Carbon Resistor (chip)	10.0K 0.1 J				01
	R0051	**RD258100**	Carbon Resistor (chip)	100.0K 0.1 J				01
	R0052	**RD257470**	Carbon Resistor (chip)	47.0K 0.1 J				01
	R0053	**RD258470**	Carbon Resistor (chip)	470.0K 0.1 J				01
	R0054	**RD258470**	Carbon Resistor (chip)	470.0K 0.1 J				01
	R0055	**RD257470**	Carbon Resistor (chip)	47.0K 0.1 J				01
	R0056	**RD257100**	Carbon Resistor (chip)	10.0K 0.1 J				01
	R0057	**RD257470**	Carbon Resistor (chip)	47.0K 0.1 J				01
	R0058	**RD256100**	Carbon Resistor (chip)	1.0K 0.1 J				01
	R0059	**RD256100**	Carbon Resistor (chip)	1.0K 0.1 J				01
	R0060	**RD256150**	Carbon Resistor (chip)	1.5K 0.1 J				01
	R0061	**RD257470**	Carbon Resistor (chip)	47.0K 0.1 J				01
	-0068	**RD257470**	Carbon Resistor (chip)	47.0K 0.1 J				01
	R0069	**RD255680**	Carbon Resistor (chip)	680.0 0.1 J				01
	R0070	**RD256330**	Carbon Resistor (chip)	3.3K 0.1 J				01
	R0071	**RD255220**	Carbon Resistor (chip)	220.0 0.1 J				01
	R0072	**RD257470**	Carbon Resistor (chip)	47.0K 0.1 J				01
	R0073	**RD250000**	Carbon Resistor (chip)	0.0 0.0 J				01
	R0074	**RD257470**	Carbon Resistor (chip)	47.0K 0.1 J				01
	R0075	**RD257470**	Carbon Resistor (chip)	47.0K 0.1 J				01
	R0076	**RD255220**	Carbon Resistor (chip)	220.0 0.1 J				01
	R0077	**RD255470**	Carbon Resistor (chip)	470.0 0.1 J				01
	R0078	**RD255100**	Carbon Resistor (chip)	100.0 0.1 J				01
	R0079	**RD254470**	Carbon Resistor (chip)	47.0 0.1 J				01
	-0083	**RD254470**	Carbon Resistor (chip)	47.0 0.1 J				01
	R0084	**RD254680**	Carbon Resistor (chip)	68.0 0.1 J				01
	R0085	**RD254680**	Carbon Resistor (chip)	68.0 0.1 J				01
	R0086	**RD259100**	Carbon Resistor (chip)	1.0M 0.1 J				01
	R0087	**RD255100**	Carbon Resistor (chip)	100.0 0.1 J				01
	-0094	**RD255100**	Carbon Resistor (chip)	100.0 0.1 J				01
	R0095	**RD254470**	Carbon Resistor (chip)	47.0 0.1 J				01

*: New Parts

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	REF NO.	PART NO.	DESCRIPTION			REMARKS	QTY	RANK
	-0099	**RD254470**	Carbon Resistor (chip)	47.0 0.1 J				01
	R0100	**RD257100**	Carbon Resistor (chip)	10.0K 0.1 J				01
	R0101	**RD255220**	Carbon Resistor (chip)	220.0 0.1 J				01
	-0108	**RD255220**	Carbon Resistor (chip)	220.0 0.1 J				01
	R0109	**RD257150**	Carbon Resistor (chip)	15.0K 0.1 J				01
	R0110	**RD257100**	Carbon Resistor (chip)	10.0K 0.1 J				01
	R0111	**RD257100**	Carbon Resistor (chip)	10.0K 0.1 J				01
	R0112	**RD254470**	Carbon Resistor (chip)	47.0 0.1 J				01
	R0113	**RD257100**	Carbon Resistor (chip)	10.0K 0.1 J				01
	R0114	**RD257100**	Carbon Resistor (chip)	10.0K 0.1 J				01
	R0115	**RD257560**	Carbon Resistor (chip)	56.0K 0.1 J				01
	R0116	**RD250000**	Carbon Resistor (chip)	0.0 0.0 J				01
	R0117	**RD256680**	Carbon Resistor (chip)	6.8K 0.1 J				01
	R0118	**RD255100**	Carbon Resistor (chip)	100.0 0.1 J				01
	R0119	**RD255100**	Carbon Resistor (chip)	100.0 0.1 J				01
	R0120	**RD256100**	Carbon Resistor (chip)	1.0K 0.1 J				01
	R0121	**RD255680**	Carbon Resistor (chip)	680.0 0.1 J				01
	R0122	**RD259100**	Carbon Resistor (chip)	1.0M 0.1 J				01
*	R0123	**RD250000**	Carbon Resistor (chip)	0.0 0.0 J				01
*	R0124	**RD257100**	Carbon Resistor (chip)	10.0K 0.1 J				01
	R0125	**RD257470**	Carbon Resistor (chip)	47.0K 0.1 J				01
	R0126	**RD257470**	Carbon Resistor (chip)	47.0K 0.1 J				01
	R0127	**RD255560**	Carbon Resistor (chip)	560.0 0.1 J				01
	R0128	**RD255560**	Carbon Resistor (chip)	560.0 0.1 J				01
	R0129	**RD256100**	Carbon Resistor (chip)	1.0K 0.1 J				01
	R0130	**RD256100**	Carbon Resistor (chip)	1.0K 0.1 J				01
	R0131	**RD255150**	Carbon Resistor (chip)	150.0 0.1 J				01
	R0132	**RD255150**	Carbon Resistor (chip)	150.0 0.1 J				01
	R0133	**RD250000**	Carbon Resistor (chip)	0.0 0.0 J				01
	R0135	**RD256330**	Carbon Resistor (chip)	3.3K 0.1 J				01
	R0136	**RD257100**	Carbon Resistor (chip)	10.0K 0.1 J				01
	-0141	**RD257100**	Carbon Resistor (chip)	10.0K 0.1 J				01
	R0142	**RD256330**	Carbon Resistor (chip)	3.3K 0.1 J				01
	R0143	**RD257100**	Carbon Resistor (chip)	10.0K 0.1 J				01
	R0144	**RD257100**	Carbon Resistor (chip)	10.0K 0.1 J				01
	R0145	**RD258100**	Carbon Resistor (chip)	100.0K 0.1 J				01
	R0146	**RD256470**	Carbon Resistor (chip)	4.7K 0.1 J				01
	R0147	**RD256470**	Carbon Resistor (chip)	4.7K 0.1 J				01
	R0200	**RD257470**	Carbon Resistor (chip)	47.0K 0.1 J				01
	R0201	**RD254100**	Carbon Resistor (chip)	10.0 0.1 J				01
	R0202	**RD255100**	Carbon Resistor (chip)	100.0 0.1 J				01
	R0205	**RD250000**	Carbon Resistor (chip)	0.0 0.0 J				01
	SK011	**VK863100**	IC Socket	DICF-42CS-E				03
	SK012	**VK863100**	IC Socket	DICF-42CS-E				03
	TA001	**VT036200**	Transistor Array	TD62083F				03
	TA002	**VQ202400**	Transistor Array	TD62785F SOURCE				04
	TH001	**VR346900**	Thermistor	ERTD2FGJ801S 800				03
	TR001	**V3795100**	Transistor	2SA2006 E,F				02
	TR002	**IC174070**	Transistor	2SC1740S R,S				01
	-004	**IC174070**	Transistor	2SC1740S R,S				01
*	X0001	**V3811500**	Ceramic Resonator	16.00M CSTCV16.0				
	X0002	**VV762900**	Quartz Crystal Unit	7M SMD-49				03
	X0003	**VV905100**	Ceramic Resonator	CSTCC4.00MG0H6-TC				01
	X0004	**VT685200**	Quartz Crystal Unit	33.8688M SMD-49				04
	ZD001	**VU172000**	Zener Diode	UDZS5.6BTE-17 5.6V				01
*		**V3505100**	Circuit Board	DM		PSR-640 (XV862C0)		
		EP600190	Bind Head Tapping Screw-B	3.0X8 MFZN2BL				01
		--	Jumper Wire	0.55		(MJ72105)		
	C0101	**UB044100**	Monolithic Ceramic Cap.	F 0.010 50V Z				01
	-0103	**UB044100**	Monolithic Ceramic Cap.	F 0.010 50V Z				01
	C0105	**UR828100**	Electrolytic Cap.	100.00 10.0V				01
	C0106	**UR828100**	Electrolytic Cap.	100.00 10.0V				01
	C0113	**UB044100**	Monolithic Ceramic Cap.	F 0.010 50V Z				01
	C0114	**UB052470**	Monolithic Ceramic Cap.	SL 470P 50V J				01
	C0115	**UB044100**	Monolithic Ceramic Cap.	F 0.010 50V Z				01
	C0191	**UB052100**	Monolithic Ceramic Cap.	SL 100P 50V J				01
	C0201	**UB044100**	Monolithic Ceramic Cap.	F 0.010 50V Z				01
	-0203	**UB044100**	Monolithic Ceramic Cap.	F 0.010 50V Z				01
	C0204	**UR828100**	Electrolytic Cap.	100.00 10.0V				01

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REF NO.	PART NO.	DESCRIPTION			REMARKS	QTY	RANK
C0205	**UB052100**	Monolithic Ceramic Cap.	SL 100P 50V J				01
C0208	**UB051220**	Monolithic Ceramic Cap.	SL 22P 50V J				01
C0209	**UB051220**	Monolithic Ceramic Cap.	SL 22P 50V J				01
C0210	**UR828100**	Electrolytic Cap.	100.00 10.0V				01
C0221	**UB044100**	Monolithic Ceramic Cap.	F 0.010 50V Z				01
C0231	**UB044100**	Monolithic Ceramic Cap.	F 0.010 50V Z				01
C0261	**UB044100**	Monolithic Ceramic Cap.	F 0.010 50V Z				01
C0291	**UR828100**	Electrolytic Cap.	100.00 10.0V				01
C0292	**UB044100**	Monolithic Ceramic Cap.	F 0.010 50V Z				01
C0293	**UR828100**	Electrolytic Cap.	100.00 10.0V				01
C0301	**UB044100**	Monolithic Ceramic Cap.	F 0.010 50V Z				01
C0302	**VI055000**	Super Capacitor	0.100F 5.5V FYD0H				04
C0303	**UB044100**	Monolithic Ceramic Cap.	F 0.010 50V Z				01
C0311	**UB044100**	Monolithic Ceramic Cap.	F 0.010 50V Z				01
C0321	**UB044100**	Monolithic Ceramic Cap.	F 0.010 50V Z				01
C0331	**UB044100**	Monolithic Ceramic Cap.	F 0.010 50V Z				01
C0332	**UR837100**	Electrolytic Cap.	10.00 16.0V				01
C0351	**UB044100**	Monolithic Ceramic Cap.	F 0.010 50V Z				01
C0361	**UB044100**	Monolithic Ceramic Cap.	F 0.010 50V Z				01
C0371	**UB044100**	Monolithic Ceramic Cap.	F 0.010 50V Z				01
C0401	**UB044100**	Monolithic Ceramic Cap.	F 0.010 50V Z				01
C0402	**UR828100**	Electrolytic Cap.	100.00 10.0V				01
C0403	**UB052100**	Monolithic Ceramic Cap.	SL 100P 50V J				01
C0411	**UB044100**	Monolithic Ceramic Cap.	F 0.010 50V Z				01
C0421	**UB044100**	Monolithic Ceramic Cap.	F 0.010 50V Z				01
-0424	**UB245100**	Monolithic Ceramic Cap.	F 0.100 25V Z				01
C0425	**UR837100**	Electrolytic Cap.	10.00 16.0V				01
C0431	**UB044100**	Monolithic Ceramic Cap.	F 0.010 50V Z				01
C0432	**UR828100**	Electrolytic Cap.	100.00 10.0V				01
C0433	**UB052100**	Monolithic Ceramic Cap.	SL 100P 50V J				01
-0441	**UB052100**	Monolithic Ceramic Cap.	SL 100P 50V J				01
C0443	**UB052100**	Monolithic Ceramic Cap.	SL 100P 50V J				01
C0445	**UB044100**	Monolithic Ceramic Cap.	F 0.010 50V Z				01
C0446	**UB044100**	Monolithic Ceramic Cap.	F 0.010 50V Z				01
C0451	**UB012220**	Monolithic Ceramic Cap.	B 220P 50V K				01
-0459	**UB012220**	Monolithic Ceramic Cap.	B 220P 50V K				01
C0460	**UB044100**	Monolithic Ceramic Cap.	F 0.010 50V Z				01
C0461	**UB044100**	Monolithic Ceramic Cap.	F 0.010 50V Z				01
C0501	**UB044100**	Monolithic Ceramic Cap.	F 0.010 50V Z				01
C0511	**UB044100**	Monolithic Ceramic Cap.	F 0.010 50V Z				01
C0531	**UB044100**	Monolithic Ceramic Cap.	F 0.010 50V Z				01
C0551	**UB044100**	Monolithic Ceramic Cap.	F 0.010 50V Z				01
C0552	**UB044100**	Monolithic Ceramic Cap.	F 0.010 50V Z				01
C0553	**UB012220**	Monolithic Ceramic Cap.	B 220P 50V K				01
-0558	**UB012220**	Monolithic Ceramic Cap.	B 220P 50V K				01
C0559	**UB044100**	Monolithic Ceramic Cap.	F 0.010 50V Z				01
C0561	**UB012220**	Monolithic Ceramic Cap.	B 220P 50V K				01
-0568	**UB012220**	Monolithic Ceramic Cap.	B 220P 50V K				01
C0601	**UB044100**	Monolithic Ceramic Cap.	F 0.010 50V Z				01
C0602	**UR828100**	Electrolytic Cap.	100.00 10.0V				01
C0603	**UR837100**	Electrolytic Cap.	10.00 16.0V				01
C0604	**UR828100**	Electrolytic Cap.	100.00 10.0V				01
C0605	**UB245100**	Monolithic Ceramic Cap.	F 0.100 25V Z				01
C0607	**UR837100**	Electrolytic Cap.	10.00 16.0V				01
C0608	**UR828100**	Electrolytic Cap.	100.00 10.0V				01
C0609	**UB245100**	Monolithic Ceramic Cap.	F 0.100 25V Z				01
C0610	**UR866100**	Electrolytic Cap.	1.00 50.0V				01
C0611	**UR866100**	Electrolytic Cap.	1.00 50.0V				01
C0612	**UB044100**	Monolithic Ceramic Cap.	F 0.010 50V Z				01
-0615	**UB044100**	Monolithic Ceramic Cap.	F 0.010 50V Z				01
C0616	**UR847100**	Electrolytic Cap.	10.00 25.0V				01
C0701	**UB012220**	Monolithic Ceramic Cap.	B 220P 50V K				01
-0712	**UB012220**	Monolithic Ceramic Cap.	B 220P 50V K				01
C0721	**UB012220**	Monolithic Ceramic Cap.	B 220P 50V K				01
-0726	**UB012220**	Monolithic Ceramic Cap.	B 220P 50V K				01
C0727	**UB044100**	Monolithic Ceramic Cap.	F 0.010 50V Z				01
-0731	**UB044100**	Monolithic Ceramic Cap.	F 0.010 50V Z				01
C0732	**UB052100**	Monolithic Ceramic Cap.	SL 100P 50V J				01
-0735	**UB052100**	Monolithic Ceramic Cap.	SL 100P 50V J				01
C0801	**UB044100**	Monolithic Ceramic Cap.	F 0.010 50V Z				01

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	REF NO.	PART NO.	DESCRIPTION			REMARKS	QTY	RANK
	C0802	**UR828100**	Electrolytic Cap.	100.00 10.0V				01
	C0803	**UB044100**	Monolithic Ceramic Cap.	F 0.010 50V Z				01
	C0901	**UB044100**	Monolithic Ceramic Cap.	F 0.010 50V Z				01
	C0902	**UR848100**	Electrolytic Cap.	100.00 25.0V				01
	C0903	**UR839100**	Electrolytic Cap.	1000 16.0V				01
	C0911	**UB044100**	Monolithic Ceramic Cap.	F 0.010 50V Z				01
	C0921	**UB044100**	Monolithic Ceramic Cap.	F 0.010 50V Z				01
	CN410	**VK025600**	Wire Trap	52147 12P TE				01
	CN420	**VK025700**	Wire Trap	52147 13P TE				01
	CN510	**VK025500**	Wire Trap	52147 11P TE				01
	CN520	**VK025200**	Wire Trap	52147 8P TE				01
	CN610	**VK024800**	Wire Trap	52147 4P TE				01
	CN710	**VK025700**	Wire Trap	52147 13P TE				01
	CN720	**VK025200**	Wire Trap	52147 8P TE				01
	CN730	**VF728300**	Wire Trap	52147 6P TE				01
	CN850	**VQ391300**	Connector	34P TE				03
	CN910	**VK024900**	Wire Trap	52147 5P TE				01
	CN920	**LB918030**	Base Post Connector	XH 3P TE				01
	CN930	**VB389800**	Connector Base Post	PH- 2P TE				01
	D0301	**VB493900**	Diode	MA221				01
	D0302	**VB493900**	Diode	MA221				01
	D0421	**VB493900**	Diode	MA221				01
	D0422	**VB493900**	Diode	MA221				01
	D0423	**VB493900**	Diode	MA221				01
	D0424	**VB493900**	Diode	MA221				01
	D0901	**VZ060500**	Diode	SFPB-62V				01
*	IC100	**XW180100**	IC			CPU		
	IC190	**XP226A00**	IC	IC-PST591DMT		RESET		03
	IC200	**XU947C00**	IC	HG73C205AFD		SWX00B		09
*	IC210	**XW177100**	IC			ROM WAVE1 32M		
*	IC220	**XW178100**	IC			ROM WAVE2 32M		
	IC260	**XV077A00**	IC	MSM514260C-60JS		DRAM 4M		07
	IC290	**XU965A00**	IC	UPC29M33T-E1		REGULATOR +3.3V		03
	IC300	**XV976A00**	IC	M5M51008CFP-70H		SRAM 1M		07
*	IC310	**XW174C00**	IC	MB8502F016FA-90PS		PROGRAM1 ROM H 32M		
	IC310	**VK863100**	IC Socket	DICF-42CS-E				03
*	IC320	**XW175C00**	IC	MB8502F016FA-90PS		PROGRAM2 ROM L 32M		
	IC320	**VK863100**	IC Socket	DICF-42CS-E				03
	IC330	**XV145A00**	IC	KM416C1200CJ-6		DRAM 16M		12
	IC350	**XW762A00**	IC	TC74HC138AFEL		DECODER		
	IC360	**XN241A00**	IC	TC74HC32AF		OR		01
*	IC370	**XU720A00**	IC	HD74LVC08FP		AND		
	IC400	**XQ595A00**	IC	SED1335F0B		LCDC		08
	IC410	**XN279C00**	IC	M5M5256DFP-70LL		SRAM 256K		07
	IC410	**XW433A00**	IC					07
	IC420	**XC723A00**	IC	SN74HCU04NSR		INVERTER		01
	IC430	**XQ042A00**	IC	SN74HC374ANSR		D-FF		03
	IC500	**XQ042A00**	IC	SN74HC374ANSR		D-FF		03
	IC510	**XW762A00**	IC	TC74HC138AFEL		DECODER		
	IC530	**VT943400**	Transistor Array	TD62785F				
	IC600	**XU829A00**	IC	PCM1716E		DAC		06
	IC610	**XJ596A00**	IC	NJM78L05A		REGULATOR +5V		01
	IC800	**XI939A00**	IC	HD63266F		FDC		09
	IC900	**XT514A00**	IC	SI-8050S(LF1103)		DC-DC CONVERTER		05
	L0421	**VQ724900**	Chip Inductance	BK2125HM601-T				01
	L0601	**VQ724900**	Chip Inductance	BK2125HM601-T				01
	L0603	**VQ724900**	Chip Inductance	BK2125HM601-T				01
	L0721	**VQ724900**	Chip Inductance	BK2125HM601-T				01
	L0731	**VQ724900**	Chip Inductance	BK2125HM601-T				01
	-0735	**VQ724900**	Chip Inductance	BK2125HM601-T				01
	L0851	**VQ724900**	Chip Inductance	BK2125HM601-T				01
	-0856	**VQ724900**	Chip Inductance	BK2125HM601-T				01
	L0901	**VN381200**	Coil	SNT-D20TF 10uH				03
*	L0903	**V3811700**	Choke Coil	220U LHL13NB221K L				
	R0111	**RD255680**	Carbon Resistor (chip)	680.0 0.1 J				01
	R0112	**RD255220**	Carbon Resistor (chip)	220.0 0.1 J				01
	R0113	**RD256330**	Carbon Resistor (chip)	3.3K 0.1 J				01
	R0116	**RD257470**	Carbon Resistor (chip)	47.0K 0.1 J				01
	R0117	**RD250000**	Carbon Resistor (chip)	0.0 0.0 J				01
	R0118	**RD255220**	Carbon Resistor (chip)	220.0 0.1 J				01

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REF NO.	PART NO.	DESCRIPTION			REMARKS	QTY	RANK
R0121	**RD257470**	Carbon Resistor (chip)	47.0K 0.1 J				01
R0122	**RD257470**	Carbon Resistor (chip)	47.0K 0.1 J				01
R0125	**RD257470**	Carbon Resistor (chip)	47.0K 0.1 J				01
-0128	**RD257470**	Carbon Resistor (chip)	47.0K 0.1 J				01
R0131	**RD257470**	Carbon Resistor (chip)	47.0K 0.1 J				01
-0135	**RD257470**	Carbon Resistor (chip)	47.0K 0.1 J				01
R0141	**RD257470**	Carbon Resistor (chip)	47.0K 0.1 J				01
-0144	**RD257470**	Carbon Resistor (chip)	47.0K 0.1 J				01
R0145	**RD256150**	Carbon Resistor (chip)	1.5K 0.1 J				01
R0191	**RD257470**	Carbon Resistor (chip)	47.0K 0.1 J				01
R0192	**RD257470**	Carbon Resistor (chip)	47.0K 0.1 J				01
R0201	**RD255330**	Carbon Resistor (chip)	330.0 0.1 J				01
R0221	**RD257470**	Carbon Resistor (chip)	47.0K 0.1 J				01
R0222	**RD257470**	Carbon Resistor (chip)	47.0K 0.1 J				01
R0231	**RD257470**	Carbon Resistor (chip)	47.0K 0.1 J				01
R0301	**RD255100**	Carbon Resistor (chip)	100.0 0.1 J				01
R0351	**RD254470**	Carbon Resistor (chip)	47.0 0.1 J				01
-0355	**RD254470**	Carbon Resistor (chip)	47.0 0.1 J				01
R0401	**RD255100**	Carbon Resistor (chip)	100.0 0.1 J				01
-0408	**RD255100**	Carbon Resistor (chip)	100.0 0.1 J				01
R0409	**RD257150**	Carbon Resistor (chip)	15.0K 0.1 J				01
R0410	**RD257560**	Carbon Resistor (chip)	56.0K 0.1 J				01
R0411	**RD259100**	Carbon Resistor (chip)	1.0M 0.1 J				01
R0431	**RD255220**	Carbon Resistor (chip)	220.0 0.1 J				01
-0438	**RD255220**	Carbon Resistor (chip)	220.0 0.1 J				01
R0439	**RD257100**	Carbon Resistor (chip)	10.0K 0.1 J				01
R0440	**RD254470**	Carbon Resistor (chip)	47.0 0.1 J				01
R0441	**RD255220**	Carbon Resistor (chip)	220.0 0.1 J				01
R0442	**RD255220**	Carbon Resistor (chip)	220.0 0.1 J				01
R0511	**RD254470**	Carbon Resistor (chip)	47.0 0.1 J				01
-0515	**RD254470**	Carbon Resistor (chip)	47.0 0.1 J				01
R0516	**RD257470**	Carbon Resistor (chip)	47.0K 0.1 J				01
R0517	**RD257470**	Carbon Resistor (chip)	47.0K 0.1 J				01
R0518	**RD257100**	Carbon Resistor (chip)	10.0K 0.1 J				01
-0520	**RD257100**	Carbon Resistor (chip)	10.0K 0.1 J				01
R0531	**RD250000**	Carbon Resistor (chip)	0.0 0.0 J				01
R0601	**RD255220**	Carbon Resistor (chip)	220.0 0.1 J				01
-0604	**RD255220**	Carbon Resistor (chip)	220.0 0.1 J				01
R0605	**RD257470**	Carbon Resistor (chip)	47.0K 0.1 J				01
R0611	**RD255180**	Carbon Resistor (chip)	180.0 0.1 J				01
R0612	**RD255180**	Carbon Resistor (chip)	180.0 0.1 J				01
R0615	**RD257100**	Carbon Resistor (chip)	10.0K 0.1 J				01
R0616	**RD254100**	Carbon Resistor (chip)	10.0 0.1 J				01
R0617	**RD256100**	Carbon Resistor (chip)	1.0K 0.1 J				01
R0701	**RD257470**	Carbon Resistor (chip)	47.0K 0.1 J				01
-0712	**RD257470**	Carbon Resistor (chip)	47.0K 0.1 J				01
R0721	**RD257100**	Carbon Resistor (chip)	10.0K 0.1 J				01
-0723	**RD257100**	Carbon Resistor (chip)	10.0K 0.1 J				01
R0724	**RD255100**	Carbon Resistor (chip)	100.0 0.1 J				01
-0726	**RD255100**	Carbon Resistor (chip)	100.0 0.1 J				01
R0727	**RD257470**	Carbon Resistor (chip)	47.0K 0.1 J				01
R0728	**RD258470**	Carbon Resistor (chip)	470.0K 0.1 J				01
R0729	**RD258470**	Carbon Resistor (chip)	470.0K 0.1 J				01
R0731	**RD258470**	Carbon Resistor (chip)	470.0K 0.1 J				01
-0734	**RD258470**	Carbon Resistor (chip)	470.0K 0.1 J				01
R0802	**RD257100**	Carbon Resistor (chip)	10.0K 0.1 J				01
R0812	**RD256100**	Carbon Resistor (chip)	1.0K 0.1 J				01
R0813	**RD255330**	Carbon Resistor (chip)	330.0 0.1 J				01
-0818	**RD255330**	Carbon Resistor (chip)	330.0 0.1 J				01
R0819	**RD256100**	Carbon Resistor (chip)	1.0K 0.1 J				01
-0821	**RD256100**	Carbon Resistor (chip)	1.0K 0.1 J				01
R0822	**RD255330**	Carbon Resistor (chip)	330.0 0.1 J				01
R0823	**RD256100**	Carbon Resistor (chip)	1.0K 0.1 J				01
R0911	**RD255470**	Carbon Resistor (chip)	470.0 0.1 J				01
TH401	**VR346900**	Thermistor	ERTD2FGJ801S 800				03
TR501	**VY677600**	Digital Transistor	DTC123JKA TP				01
-505	**VY677600**	Digital Transistor	DTC123JKA TP				01
* X0101	**V3835100**	Ceramic Resonator	7M EFOS7004E5				
X0201	**VZ703600**	Quartz Crystal Unit	8.4672M SMD-49				03
X0401	**VV905100**	Ceramic Resonator	CSTCC4.00MG0H6-TC				01

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	REF NO.	PART NO.	DESCRIPTION			REMARKS	QTY	RANK
*	X0801	**V3811500**	Ceramic Resonator	16.00M CSTCV16.0				
	ZD911	**VU172000**	Zener Diode	UDZS5.6BTE-17 5.6V				01
*		**V4200400**	Circuit Board	INV		(XW193B0)		
		VA078900	Jumper Wire	0.55				
*	C0001	**V4007800**	Electrolytic Cap. (chip)	0.15 100V ECQV11				
*	C0002	**V4007700**	Ceramic Capacitor-SL	15P 3KV J				
	CN001	**VB389800**	Connector Base Post	PH- 2P TE				01
	CN002	**LB918040**	Base Post Connector	XH 4P TE				01
*	L0001	**V4006900**	Coil	RCH-895-101K 100uH				
	Q0001	**VT929300**	Transistor	2SD2097 TV2 Q,R,S				01
	Q0002	**VT929300**	Transistor	2SD2097 TV2 Q,R,S				01
	R0001	**HF755560**	Carbon Resistor	560.0 1/4 J				01
*	T0001	**V4006800**	Inverter Transformer	SEP-16				
*		**V3865800**	Circuit Board	JACK		PSR-740 (XW135B0)		
		V4639400	Circuit Board	JACK		PSR-640 (XW135B0)		
		VI878600	Cable Holder	51048 8P TE				01
		VI878700	Cable Holder	51048 9P TE				01
		VD041700	Jumper Wire	0.55			23	
		--	Connector Assembly	JACK 8P		(VZ53110)		
		VB933800	Ferrite Core	BP53RB310190100A				04
		--	Connector Assembly	DM-JACK 8P L=450		(VZ53090)		
		--	Connector Assembly	AM-JK		(V379830)		
	C001	**FG644100**	Ceramic Capacitor-F	0.0100 50V Z				01
	-003	**FG644100**	Ceramic Capacitor-F	0.0100 50V Z				01
	C004	**UR837100**	Electrolytic Cap.	10.00 16.0V				01
	C005	**FG644100**	Ceramic Capacitor-F	0.0100 50V Z				01
	C006	**UR817470**	Electrolytic Cap.	47.00 6.3V				01
	C007	**FG644100**	Ceramic Capacitor-F	0.0100 50V Z				01
	-011	**FG644100**	Ceramic Capacitor-F	0.0100 50V Z				01
	C101	**FG044100**	Ceramic Capacitor	0.0100		PSR-640		
	C102	**FG613100**	Ceramic Capacitor	1000P		PSR-640		
	C103	**FG044100**	Ceramic Capacitor	0.0100		PSR-640		
	D001	**VB941200**	Diode	1SS133,1SS176				01
	-004	**VB941200**	Diode	1SS133,1SS176				01
	FL01	**VB835000**	Coil	FL5R200QNT 20uH				01
	-10	**VB835000**	Coil	FL5R200QNT 20uH				01
	FL01	**VF968800**	Coil	SBT-0260TF 60uH				01
	-10	**VF968800**	Coil	SBT-0260TF 60uH				01
	FL11	**GE300670**	Ferrite Bead	BL02RN2-R62T4				02
	FL12	**VB835000**	Coil	FL5R200QNT 20uH				01
	FL12	**VF968800**	Coil	SBT-0260TF 60uH				01
	FL13	**VB835000**	Coil	FL5R200QNT 20uH				01
	FL13	**VF968800**	Coil	SBT-0260TF 60uH				01
	IC01	**XU463A00**	IC	SN75C1168N		LINE TRANSCEIVER		05
	IC02	**IG142250**	IC	SN74HCU04N		INVERTER		01
	JK01	**VB312600**	Phone Jack	YKB21-5012 BL		SUSTAIN		02
	JK02	**VJ107200**	DIN Connector	5P YKF51-5050		MIDI IN		01
	JK02	**VZ085800**	DIN Connector	5P HDC-052S-01				01
	JK03	**VJ107200**	DIN Connector	5P YKF51-5050		MIDI OUT		01
	JK03	**VZ085800**	DIN Connector	5P HDC-052S-01				01
	JK04	**VM761000**	DIN Connector	DIN 8P MD-S810		TO HOST		03
	JK06	**VB312600**	Phone Jack	YKB21-5012 BL		AUX OUT R		02
	JK07	**VC687500**	Phone Jack	YKB21-5014 BL		AUX OUT L/L+R		01
	JK008	**VC664500**	Connector	HEC2305		DC IN		01
	JK010	**LB101870**	Phone Jack	YKB21-5006		FOOT VOL.		03
	JK010	**VV943300**	Phone Jack	HTJ-064-04A				02
	L001	**VI486800**	Line Filter	SU10VD-20020				03
	PC01	**VG181900**	Photo Coupler	PC-900V				03
	R001	**HF757100**	Carbon Resistor	10.0K 1/4 J				01
	R002	**HF757100**	Carbon Resistor	10.0K 1/4 J				01
	R003	**HF757470**	Carbon Resistor	47.0K 1/4 J				01
	R004	**HF757100**	Carbon Resistor	10.0K 1/4 J				01
	R005	**HF755220**	Carbon Resistor	220.0 1/4 J				01
	R006	**HF757220**	Carbon Resistor	22.0K 1/4 J				01
	R007	**HF757100**	Carbon Resistor	10.0K 1/4 J				01
	R008	**HF757220**	Carbon Resistor	22.0K 1/4 J				01
	R009	**HF755220**	Carbon Resistor	220.0 1/4 J				01
	R010	**HF755220**	Carbon Resistor	220.0 1/4 J				01

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	REF NO.	PART NO.	DESCRIPTION			REMARKS		QTY	RANK
	R011	**HF757100**	Carbon Resistor	10.0K 1/4 J					01
	-014	**HF757100**	Carbon Resistor	10.0K 1/4 J					01
	R015	**HF755220**	Carbon Resistor	220.0 1/4 J					01
	R016	**HF755220**	Carbon Resistor	220.0 1/4 J					01
	R017	**HF755100**	Carbon Resistor	100.0 1/4 J					01
	R018	**HF755100**	Carbon Resistor	100.0 1/4 J					01
	R019	**HF757100**	Carbon Resistor	10.0K 1/4 J					01
	R020	**HF756100**	Carbon Resistor	1.0K 1/4 J					01
	R021	**HF757100**	Carbon Resistor	10.0K 1/4 J					01
	R022	**HF755220**	Carbon Resistor	220.0 1/4 J					01
	R023	**HF756150**	Carbon Resistor	1.5K 1/4 J					01
	R024	**HF756470**	Carbon Resistor	4.7K 1/4 J					01
	R025	**HF757100**	Carbon Resistor	10.0K 1/4 J					01
	SW01	**VQ665200**	Slide Switch	SSSF144-S06N-0		HOST SELECT(MIDI,..,MAC)			03
	TR01	**IC174070**	Transistor	2SC1740S R,S					01
	TR02	**IC174070**	Transistor	2SC1740S R,S					01
	WB01	**GE300670**	Ferrite Bead	BL02RN2-R62T4					02
	-07	**GE300670**	Ferrite Bead	BL02RN2-R62T4					02
*		**V4201700**	Circuit Board	MIC		PSR-740	(XW384B0)		
*		**V4201800**	Circuit Board	MIC-JACK		PSR-740	(XW384B0)		
		LB101870	Phone Jack	YKB21-5006		MIC/LINE IN			03
		VB389800	Connector Base Post	PH- 2P TE					01
		VF456600	Coil	SBT-0180W 80uH					01
		VK024600	Wire Trap	52147 2P TE					01
	C0001	**UI566100**	Electrolytic Cap.	1.00 50.0V					01
	C0002	**UI566100**	Electrolytic Cap.	1.00 50.0V					01
	C0003	**FG652100**	Ceramic Capacitor-SL	100P 50V J					01
	C0004	**UI537100**	Electrolytic Cap.	10.00 16.0V					01
	C0005	**UI537100**	Electrolytic Cap.	10.00 16.0V					01
	C0006	**UI566100**	Electrolytic Cap.	1.00 50.0V					01
	C0007	**FG612560**	Ceramic Capacitor-B	560P 50V K					01
	C0008	**FG652100**	Ceramic Capacitor-SL	100P 50V J					01
	C0009	**UI537100**	Electrolytic Cap.	10.00 16.0V					01
	C0010	**UI537100**	Electrolytic Cap.	10.00 16.0V					01
	C0011	**FG613560**	Ceramic Capacitor-B	5600P 50V K					01
	C0012	**UI566100**	Electrolytic Cap.	1.00 50.0V					01
	C0013	**UI566100**	Electrolytic Cap.	1.00 50.0V					01
	C0014	**VC694800**	Semiconductive Cera. Cap.	0.1000 25V Z					01
	CN001	**VB858100**	Connector Base Post	PH- 2P SE					01
	CN002	**VK026200**	Wire Trap	52151 3P SE					01
	IC001	**XF483A00**	IC	LB1443N		LED DRIVER			02
*	IC100	**XW373A00**	IC	M5223AL		OP AMP			
*	LD001	**V4009000**	LED	SLZ-290B-13-T1 GR		SIGNAL			
*	LD002	**V4009200**	LED	SLZ-190B-13-T1 RE		OVER			
	L0001	**VA078900**	Jumper Wire	0.55					
	-0003	**VA078900**	Jumper Wire	0.55					
	R0003	**HF758100**	Carbon Resistor	100.0K 1/4 J					01
	R0004	**HF758100**	Carbon Resistor	100.0K 1/4 J					01
	R0005	**HF756100**	Carbon Resistor	1.0K 1/4 J					01
	R0006	**HF757100**	Carbon Resistor	10.0K 1/4 J					01
	R0007	**HF756100**	Carbon Resistor	1.0K 1/4 J					01
	R0008	**HF756470**	Carbon Resistor	4.7K 1/4 J					01
	R0009	**HF757180**	Carbon Resistor	18.0K 1/4 J					01
	R0010	**HF756330**	Carbon Resistor	3.3K 1/4 J					01
	R0011	**HF756330**	Carbon Resistor	3.3K 1/4 J					01
	R0012	**HF757100**	Carbon Resistor	10.0K 1/4 J					01
	R0013	**HF756470**	Carbon Resistor	4.7K 1/4 J					01
	R0014	**HF756220**	Carbon Resistor	2.2K 1/4 J					01
	R0015	**HF756330**	Carbon Resistor	3.3K 1/4 J					01
*	SW001	**V4009300**	Slide Switch	SSSF022-S12N0		MIC/LINE			
*	VR002	**V4009400**	Rotary Variable Resirtor	A10.0K RK09D113		INPUT VOLUME			
		VU648100	Circuit Board	MK-L			(XR564B0)		09
		VB941200	Diode	1SS133,1SS176					01
		VK025600	Wire Trap	52147 12P TE					01
		VK025100	Wire Trap	52147 7P TE					01
		VU648200	Circuit Board	MK-H			(XR565B0)		09
		VB941200	Diode	1SS133,1SS176					01

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	REF NO.	PART NO.	DESCRIPTION			REMARKS	QTY	RANK
		VK025600	Wire Trap	52147 12P TE				01
		VK024900	Wire Trap	52147 5P TE				01
		V2404900	Circuit Board	MKS3		(XU878B0)		10
		--	Vibration-proof Tape	10X64X0.5		(VK34680)		
		VA078900	Jumper Wire	0.55			5	
	C1	**FG651220**	Ceramic Capacitor-SL	22P 50V J				01
	C1	**VR027400**	Ceramic Capacitor-SL	22P 63V J				01
	C2	**FG651220**	Ceramic Capacitor-SL	22P 50V J				01
	C2	**VR027400**	Ceramic Capacitor-SL	22P 63V J				01
	C3	**UR828100**	Electrolytic Cap.	100.00 10.0V				01
	C4	**VD930900**	Semiconductive Cera. Cap.	0.1000 25V M				01
	C4	**VM902400**	Semiconductive Cera. Cap.	0.1000 25V Z				01
	CA1	**VP755200**	Ceramic Capacitor Array	100P 50V K				02
	CA2	**VT487100**	Ceramic Capacitor Array	470P X12				02
	CL1	**VN002100**	Ceramic Resonator	CST8.00MTW140				02
	CL1	**VQ305500**	Ceramic Resonator	8.00M EFOEC8004T3				02
	CN1	**VF728300**	Wire Trap	52147 6P TE				01
*	CN2	**VK025600**	Wire Trap	52147 12P TE				01
*	CN3	**VK025100**	Wire Trap	52147 7P TE				01
	CN4	**VK024900**	Wire Trap	52147 5P TE				01
	IC1	**XR951A00**	IC	HD63B05V0F07P		CPU		06
	R1	**HF456470**	Carbon Resistor	4.7K 1/4 J				01
	R1	**VL631400**	Carbon Resistor	4.7K 1/6 J				01
	R2	**HF456470**	Carbon Resistor	4.7K 1/4 J				01
	R2	**VL631400**	Carbon Resistor	4.7K 1/6 J				01
	R3	**HF457470**	Carbon Resistor	47.0K 1/4 J				01
	R3	**VL632600**	Carbon Resistor	47.0K 1/6 J				01
	RA1	**VH373200**	Resistor Array	RGLE12X473J				01
*		**V3866700**	Circuit Board	PN		PSR-740 (XW115B0)		
*		**V3866800**	Circuit Board	PN		PSR-640 (XW115B0)		
		VA078900	Jumper Wire	0.55			12	
	CN001	**VI878600**	Cable Holder	51048 8P TE				01
	CN002	**VI878900**	Cable Holder	51048 11P TE				01
	CN05A	**VI878100**	Cable Holder	51048 3P TE				01
	CN05B	**VI878100**	Cable Holder	51048 3P TE				01
	CN06A	**VI878100**	Cable Holder	51048 3P TE				01
	CN06B	**VI878100**	Cable Holder	51048 3P TE		PSR-740		01
	CN07A	**VI878200**	Cable Holder	51048 4P TE				01
	CN07B	**VI878200**	Cable Holder	51048 4P TE				01
	CN008	**VI879100**	Cable Holder	51048 13P TE				01
	CN08A	**VI878000**	Cable Holder	51048 2P TE				01
	CN08B	**VI878000**	Cable Holder	51048 2P TE				01
	CN09A	**VI878400**	Cable Holder	51048 5P TE				01
	CN09B	**VI878400**	Cable Holder	51048 5P TE				01
	CN10A	**VI878300**	Cable Holder	51048 6P TE				01
	CN10B	**VI878300**	Cable Holder	51048 6P TE		PSR-740		01
	CN011	**VI878100**	Cable Holder	51048 3P TE		PSR-640		01
	DS004	**VB941200**	Diode	1SS133,1SS176				01
	-007	**VB941200**	Diode	1SS133,1SS176				01
	D0001	**VB941200**	Diode	1SS133,1SS176				01
	D0011	**VB941200**	Diode	1SS133,1SS176				01
	D0021	**VB941200**	Diode	1SS133,1SS176				01
	D0031	**VB941200**	Diode	1SS133,1SS176				01
	D0041	**VB941200**	Diode	1SS133,1SS176				01
	D0051	**VB941200**	Diode	1SS133,1SS176				01
	D0061	**VB941200**	Diode	1SS133,1SS176				01
	D0071	**VB941200**	Diode	1SS133,1SS176				01
	EC001	**VU481300**	Encoder	REB161 PVB 15F		Data Dial		03
	LD000	**VT425300**	LED	SLZ-290B-17-T1 GR		DISK IN USE		01
	LD001	**VT425100**	LED	SLZ-190B-17-T1 RE		PSR-740 GROOVE ON/OFF		01
	LD002	**VD180000**	LED	SLZ-190B-03 RE		INTRO 2		01
	LD003	**VT425100**	LED	SLZ-190B-17-T1 RE		SYNC START		01
	LD004	**VT425100**	LED	SLZ-190B-17-T1 RE		ACMP ON/OFF		01
	LD010	**VD180000**	LED	SLZ-190B-03 RE		FREZE		01
	LD011	**VD180000**	LED	SLZ-190B-03 RE		MAIN C		01
	LD012	**VD180000**	LED	SLZ-190B-03 RE		PSR-740 COUNT INTRO 1		01
	LD013	**VT425100**	LED	SLZ-190B-17-T1 RE		SYNC STOP		01
	LD014	**VT425100**	LED	SLZ-190B-17-T1 RE		SUSTAIN		01

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REF NO.	PART NO.	DESCRIPTION			REMARKS	QTY	RANK
LD020	VT425100	LED	SLZ-190B-17-T1 RE		VOICE R2		01
LD021	VD180000	LED	SLZ-190B-03 RE		MAIN D		01
LD023	VT425100	LED	SLZ-190B-17-T1 RE		PSR-740 FAST/SLOW		01
LD024	VT425100	LED	SLZ-190B-17-T1 RE		TOUCH		01
LD030	VT425100	LED	SLZ-190B-17-T1 RE		VOICE R1		01
LD031	VD180000	LED	SLZ-190B-03 RE		ENDING 2		01
LD033	VT425100	LED	SLZ-190B-17-T1 RE		PSR-740 DSP3		01
LD034	VD180000	LED	SLZ-190B-03 RE		HARMONY/ECHO		01
LD040	VT425100	LED	SLZ-190B-17-T1 RE		VOICE L		01
LD041	VT425100	LED	SLZ-190B-17-T1 RE		PSR-740 ON/OFF		01
LD042	VD180000	LED	SLZ-190B-03 RE		MAIN A		01
LD043	VT425100	LED	SLZ-190B-17-T1 RE		FAST/SLOW		01
LD044	VI100100	LED	SLZ-190B-11-T1 RE		PSR-740 MASTER EQ		01
LD050	VT425100	LED	SLZ-190B-17-T1 RE		PSR-740 TALK		01
LD051	VD180000	LED	SLZ-190B-03 RE		PSR-740 ENDING 2		01
LD052	VD180000	LED	SLZ-190B-03 RE		MAIN B		01
LD053	VT425100	LED	SLZ-190B-17-T1 RE		DSP2		01
LD054	VD118700	LED	GL8HD22 RE				01
LD060	VT425100	LED	SLZ-190B-17-T1 RE		PSR-740 DSP4		01
LD061	VG778600	LED	SLZ290B-03-T2 GR		REGISTRATION MEMORY		01
LD062	VG778600	LED	SLZ290B-03-T2 GR		SONG		01
LD063	VD180000	LED	SLZ-190B-03 RE		PSR-740 FAST/SLOW		01
LD064	VD118700	LED	GL8HD22 RE				01
LD070	VT425100	LED	SLZ-190B-17-T1 RE		PSR-740 REVERB		01
LD071	VD180000	LED	SLZ-190B-03 RE		ONE TOCH SETTING		01
LD072	VD180000	LED	SLZ-190B-03 RE		ACMP		01
LD073	VD180000	LED	SLZ-190B-03 RE		PSR-740 DSP1		01
LD074	VT940900	LED	SLZ-190B-02-T1 RE		RECORD		01
SW000	VV056000	Tact Switch	SKQNAE025A		LCD8,LCD9,VOICE R2,7,1,		01
-005	VV056000	Tact Switch	SKQNAE025A		0		01
SW006	VV056000	Tact Switch	SKQNAE025A		PSR-740 GROOVE		01
SW007	VV056000	Tact Switch	SKQNAE025A		OTS		01
SW008	VV056000	Tact Switch	SKQNAE025A		MEMORY		01
SW009	VV056000	Tact Switch	SKQNAE025A		PSR-740 FAST/SLOW		01
SW010	VV056000	Tact Switch	SKQNAE025A		PSR-740 DSP3		01
SW011	VV056000	Tact Switch	SKQNAE025A		MIXER		01
SW100	VV056000	Tact Switch	SKQNAE025A		LCD7,LCD10,VOICE R1,-/NO,		01
-105	VV056000	Tact Switch	SKQNAE025A		2,+/YES		01
SW106	VV056000	Tact Switch	SKQNAE025A		PSR-740 ON/OFF		01
SW107	VV056000	Tact Switch	SKQNAE025A		PSR-740 ENDING2		01
SW108	VV056000	Tact Switch	SKQNAE025A		REGIST1,FINGERING,FAST/		01
-111	VV056000	Tact Switch	SKQNAE025A		SLOW,VOICE CHANGE		01
SW200	VV056000	Tact Switch	SKQNAE025A		LED6,LCD11,VOICE L,		01
-205	VV056000	Tact Switch	SKQNAE025A		VOLUME,3,PAD1		01
SW206	VV056000	Tact Switch	SKQNAE025A		PSR-740 REBERB		01
SW207	VV056000	Tact Switch	SKQNAE025A		ENDING1,REGOST2,ACMP ON/		01
-211	VV056000	Tact Switch	SKQNAE025A		OFF,DSP2,SUSTAIN		01
SW300	VV056000	Tact Switch	SKQNAE025A		LCD5		01
SW301	VV056000	Tact Switch	SKQNAE025A		LCD12		01
SW302	VV056000	Tact Switch	SKQNAE025A		PSR-740 VOCAL HARMONY SET		01
SW303	VV056000	Tact Switch	SKQNAE025A		TRNSPOSE,4,SAVE		01
-305	VV056000	Tact Switch	SKQNAE025A				01
SW306	VV056000	Tact Switch	SKQNAE025A		PSR-740 DSP4		01
SW307	VV056000	Tact Switch	SKQNAE025A		MAIND,REGIST3,SYNC START		01
-309	VV056000	Tact Switch	SKQNAE025A				01
SW310	VV056000	Tact Switch	SKQNAE025A		PSR-740 FAST/SLOW1		01
SW311	VV056000	Tact Switch	SKQNAE025A		TOUCH		01
SW400	VV056000	Tact Switch	SKQNAE025A		LCD4		01
SW401	VV056000	Tact Switch	SKQNAE025A		LCD13		01
SW402	VV056000	Tact Switch	SKQNAE025A		PSR-740 MULTI EFFECT SET.		01
SW403	VV056000	Tact Switch	SKQNAE025A		TEMPO,5,UTILTY		01
-405	VV056000	Tact Switch	SKQNAE025A				01
SW406	VV056000	Tact Switch	SKQNAE025A		PSR-740 TALK		01
SW407	VV056000	Tact Switch	SKQNAE025A		MAIN C,REGIST4,SYNC STOP		01
-409	VV056000	Tact Switch	SKQNAE025A				01
SW410	VV056000	Tact Switch	SKQNAE025A		PSR-740 DSP1		01
SW411	VV056000	Tact Switch	SKQNAE025A		HARMONY/ECHO		01
SW500	VV056000	Tact Switch	SKQNAE025A		LCD3		01
SW501	VV056000	Tact Switch	SKQNAE025A		LCD14		01
SW502	VV056000	Tact Switch	SKQNAE025A		PSR-740 GROOVE SETTING		01

✻: New Parts

RANK: Japan only

	REF NO.	PART NO.	DESCRIPTION			REMARKS	QTY	RANK
	SW503	**VV056000**	Tact Switch	SKQNAE025A		STYLE,6,PAD4,VOICE L,		01
	-508	**VV056000**	Tact Switch	SKQNAE025A		MAIN B,FREEZE		01
	SW509	**VV056000**	Tact Switch	SKQNAE025A		PSR-740 INTRO1		01
	SW510	**VV056000**	Tact Switch	SKQNAE025A		DEMO		01
	SW511	**VV056000**	Tact Switch	SKQNAE025A		PSR-740 MASTER EQ		01
	SW600	**VV056000**	Tact Switch	SKQNAE025A		LCD2		01
	SW601	**VV056000**	Tact Switch	SKQNAE025A		LCD15		01
	SW602	**VV056000**	Tact Switch	SKQNAE025A		PSR-740 ORGAN FLUTES		01
	SW603	**VV056000**	Tact Switch	SKQNAE025A		SONG,8,PAD3,VOICE R1,		01
	-611	**VV056000**	Tact Switch	SKQNAE025A		MAIN A,INTRO2,STOP,START/ STOP,NEXT,DIRECT ACCESS		01
	SW700	**VV056000**	Tact Switch	SKQNAE025A		LCD1,LCD16,EXIT,FUNCTION,		01
	-708	**VV056000**	Tact Switch	SKQNAE025A		9,PAD2,VOICE R2,INTRO2, LOAD		01
	SW710	**VV056000**	Tact Switch	SKQNAE025A		BACK		01
	SW711	**VV056000**	Tact Switch	SKQNAE025A		RECORD		01
	VR001	**VT432100**	Rotary Variable Resistor	B10K EVJ05DF25B14		PSR-640 PITCH BEND		03
	VR002	**VZ486300**	Rotary Variable Resistor	B10K EVJ05DF20B14		PSR-740 MODULATION		03
	VR003	**VZ486300**	Rotary Variable Resistor	B10K EVJ05DF20B14		PSR-740 PITCH BEND		03
	W0100	**--**	Connector Assembly	DM-PN1		(V379880)		
	W0200	**--**	Connector Assembly	DM-PN2		(V379890)		
	W0300	**--**	Connector Assembly	DM-PN3		(V379900)		
	W0400	**--**	Connector Assembly	PN1-PB		(V379940)		
	W0500	**--**	Connector Assembly	PN1-PN4		(V379950)		
	W0600	**--**	Connector Assembly	PN1-PN5		(V379960)		
	W0700	**--**	Connector Assembly	PN1-PN6		(V379970)		
	W0800	**--**	Connector Assembly	PN1-MOD		PSR-740 (V379980)		
	W0900	**--**	Connector Assembly	PN1-ENC		(V379990)		
		VZ089200	AC Adapter	PA-6 BL		J		16
*		**XV910A00**	Speaker	5.0cm 4 ohm		TWEETER	2	
		XT523A00	Speaker	12.0cm 4 ohm 10W		WOOFER	2	07
		VT282300	LCD	EDMMR03Y00		Upper		16
*		**V3863900**	LCD	C-51115N-T-		Lower		
*		**V3863700**	Back-lit Assembly	PT				
		V3075300	Floppy Disk Drive	MF355F-3252MG F				16

✻: New Parts

RANK: Japan only

■PSR-740 CIRCUIT DIAGRAM (DM1/2, MKS3, MKH, MKL, INV)

MKS3

CPU

28CC1-8812655

MKH

28CC1-8811360

MKL

28CC1-8811360

DM 1/2

FDC

CPU

DECODER

SRAM 1M

DRAM 4M

DRAM 4M

EPROM MAIN1 32M

EPROM MAIN2 32M

AND

OR

OR

AND

OR

INVETER

D-FF

TRANSISTOR ARRAY

TRANSISTOR ARRAY

DECODER

TRANSISTOR ARRAY

D-FF

TRANSISTOR ARRAY

SRAM 256K

INVERTER

LCDC

INVERTER

to PN1-CN8

to JACK-JK5

to MIC-JACK - CN5

to AM-CN310

to PN1-CN2

to PN1-CN1

REGULATOR +9V

REGULATOR +5V

DC-DC CONVERTER

Floppy Disk Drive

N.C.

28CC1-8814267

LCD

to Back - light Assembly

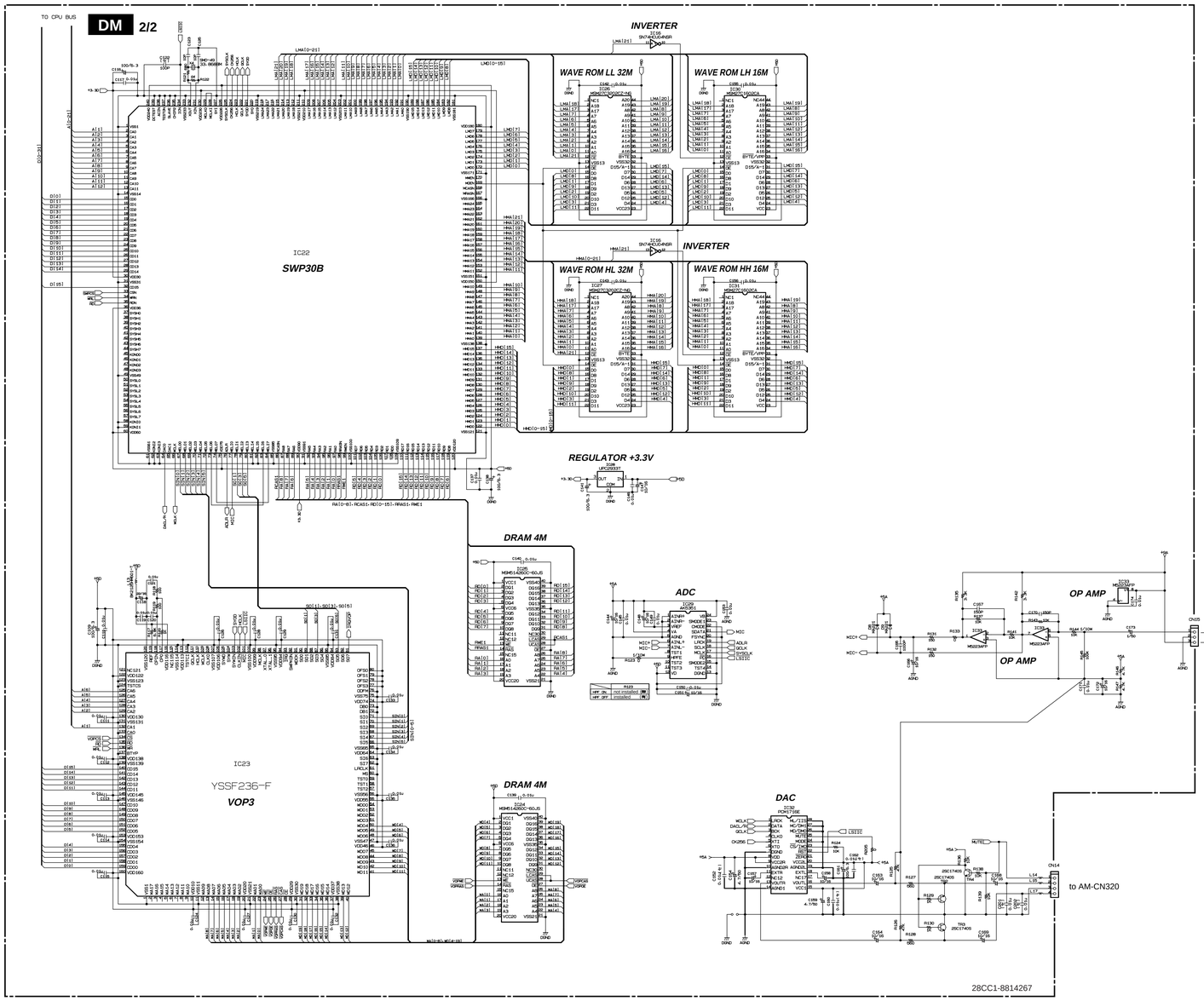
INV

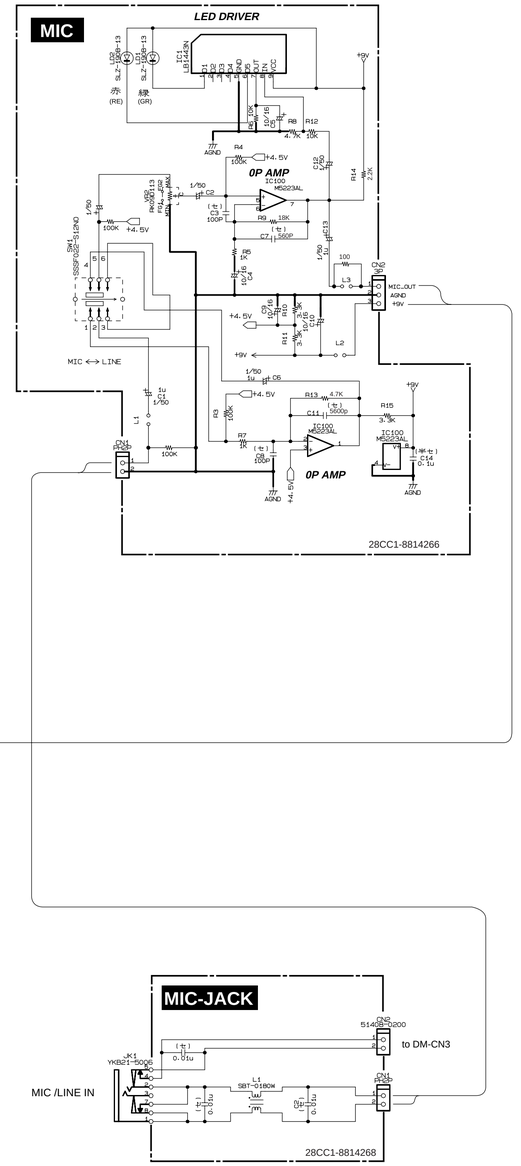
2NA-8814265

(セ): Ceramic Capacitor
(マ): Mylar Capacitor
酸金: Metal Oxide Film Resistor

Note : See parts list for details of circuit board component parts

■PSR-740 CIRCUIT DIAGRAM (DM2/2, MIC-JACK, MIC)





to AM-CN320

(セ): Ceramic Capacitor
(半セ): Semi-Conductive Ceramic Capacitor

Note : See parts list for details of circuit board component parts

PSR-740

■PSR-640 CIRCUIT DIAGRAM (DM, MKS3, MKH, MKL, INV)

MKS3

CPU

28CC1-8812655

MKH

28CC1-8811360

MKL

28CC1-8811360

DM

RESET

DECODER

OR

AND

DECODER

AND

D-FF

LATCH

TRANSISTOR ARRAY

DECODER

DEC

TRANSISTOR ARRAY

D - FF

LATCH

SRAM 1M

PROGRAM1 ROM H 32M

DRAM 16M

PROGRAM2 ROM L32M

IC100
SH7043
CPU

SWX00B
IC200

ROM WAVE1 32M

ROM WAVE2 32M

DRAM 4M

REGULATOR +3.3V

REGULATOR +5V

DAC

IC400
SED1339F0B
LCDC

SRAM 256K

INVERTER

INVERTER

IC800
HD63266F
FDC

DC-DC CONVERTER

28CC1-8813199

LCD

Floppy Disk Drive

INV

2NA-8814265

to PN1-CN2

to PN1-CN1

to PN1-CN8

to JACK-JK5

to Back - light Assembly

to AM - CN310

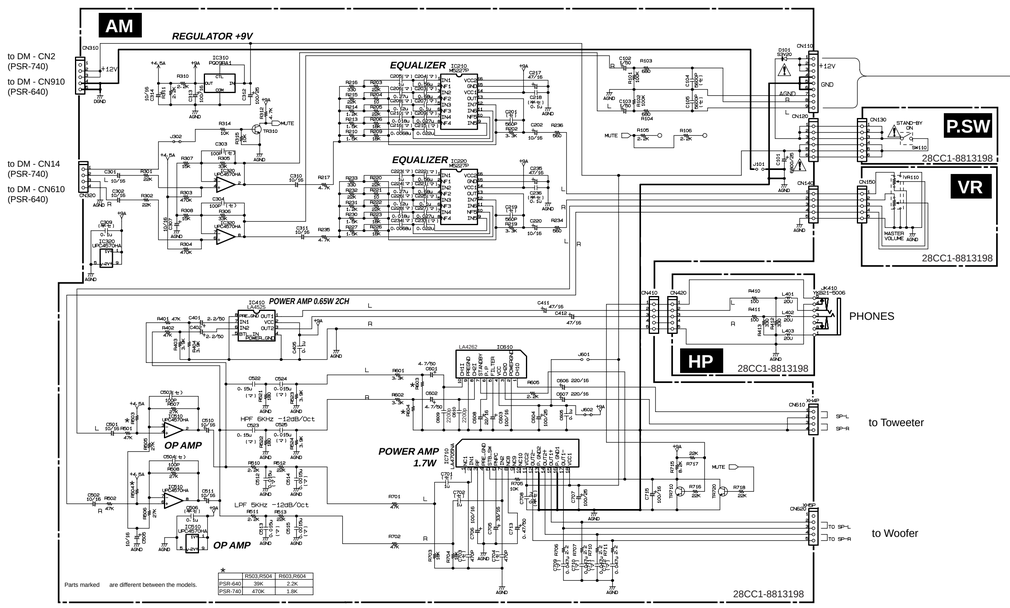
to AM - CN320

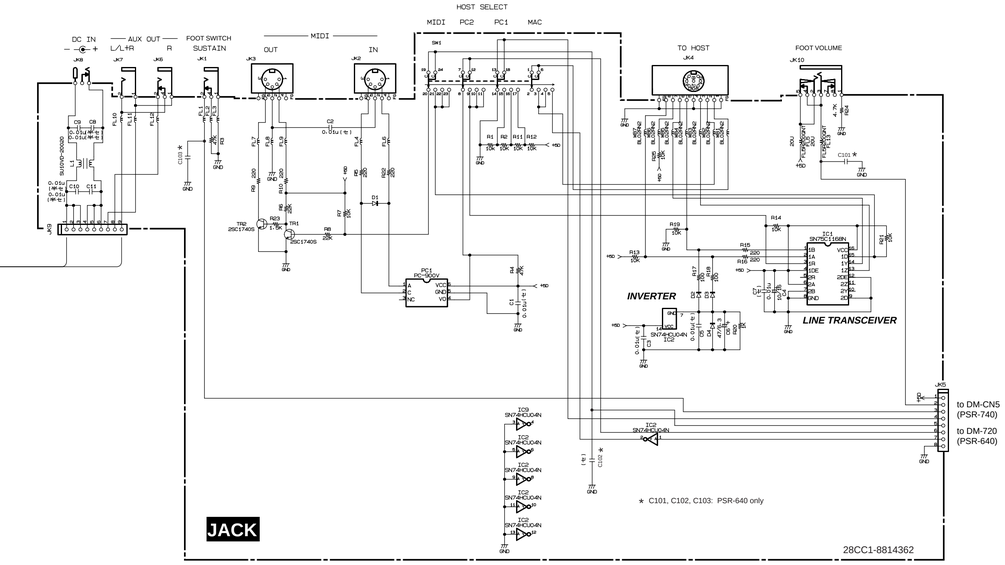
Note : See parts list for details of circuit board component parts

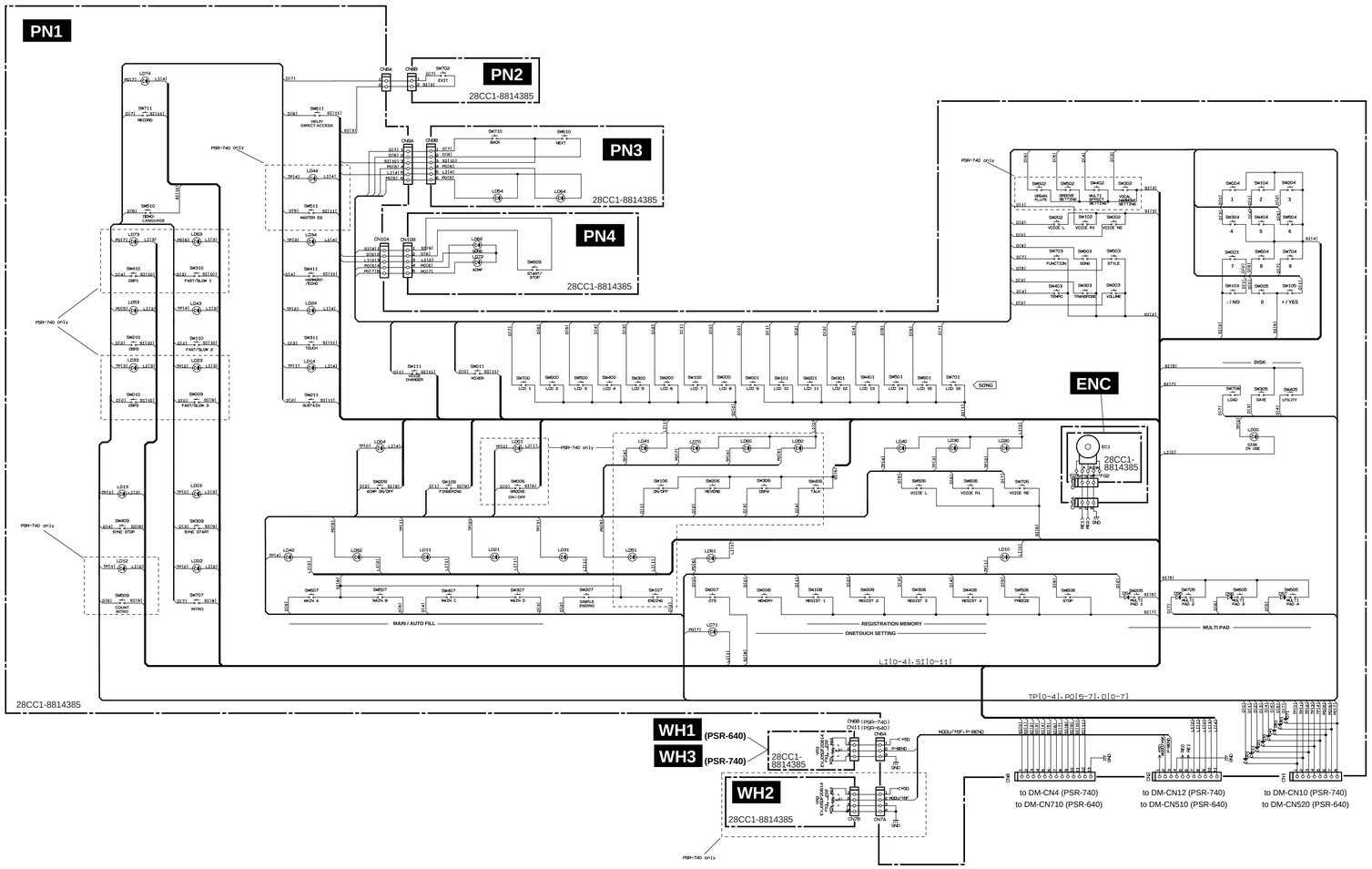
(セラ): Ceramic Capacitor

(マ): Mylar Capacitor

■PSR-740 / PSR-640 OVERALL CIRCUIT DIAGRAM (AM, HP, P.SW, VR, JACK, PN1, PN2, PN3, PN4, WH1, WH2, WH3, ENC)







- •NJM78L05A-T3(X)757A00) REGULATOR +5V — 1: OUTPUT 2: COMMON 3: INPUT
- •NJM78L05A(XJ596A00) REGULATOR +5V — 1: OUTPUT 2: COMMON 3: INPUT
- •PQ09RA1(XQ774A00) REGULATOR +9V — 1: IN 2: OUT 3: GND 4: ON/OFCont.
- • µPC2933T-E1(XS516A00) • µPC29M33T-E1(XU965A00) REGULATOR +3.3V — 1: V in 2: GND 3: V out
- •SI-8050S(LF1103) (XT514A00) REGULATOR +5V — 1: V in 2: SW out 3: GND 4: V os 5: S.S
- •AN77L09-TA (XT676A00) REGULATOR +9V — 1: OUTPUT 2: COMMON 3: INPUT
- •S3V20 (VR313500) DIODE — 1: ANODE 2: CATHODE

Note : See parts list for details of circuit board component parts

■ TO SERVICE PERSONNEL

Critical Components Infomation
Components having special characteristics are marked ⚠ and must be replaced with parts having specifications equel to those originally installed.

(セ): Ceramic Capacitor
(MセI): Semi-Conductive Ceramic Capacitor
(マ): Mylar Capacitor

PSR-740 / PSR-640